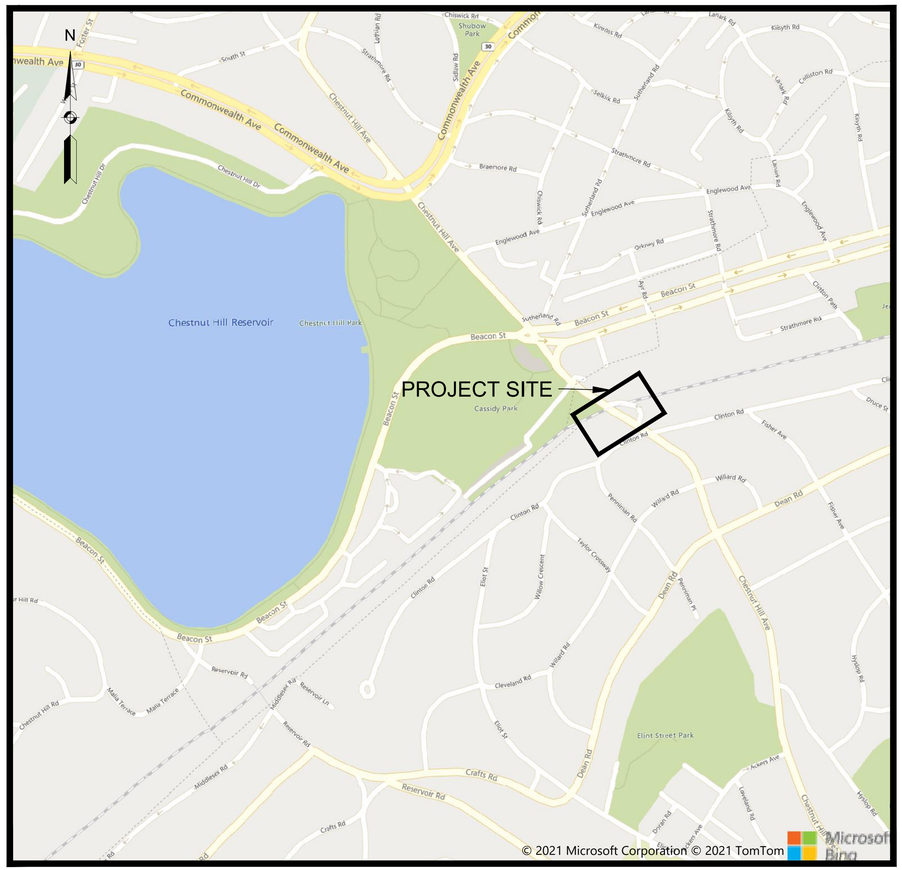

PROJECT LOCATION PLAN

0 200 400 FEET

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

Emergency Repair of MBTA Reservoir Busway Chestnut Hill Avenue

Brookline, Massachusetts

vhb
101 WALNUT STREET
WATERTOWN, MA 02471
(617) 924-1770

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4-13-2022
COMMONWEALTH OF MASSACHUSETTS ROBERT A. CAHOON CIVIL No. 55393 PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS STEPHEN JAHNES No. 50847 REGISTERED PROFESSIONAL ENGINEER
4/13/2022

SHEET: 01 OF 22

\\vhb.com\gbl\proj\Boston\15063.01 OnCall Dsgn Support\cad\te\planset\Reservoir Station\15063-01 Reservoir_HD(COVER).dwg

GENERAL

1. ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.
2. THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
3. WORK IMPACTING RAILROAD PROPERTY AND / OR RIGHT-OF-WAY SHALL BE COORDINATED WITH MBTA AND KEOLIS.
4. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. ALL CONSTRUCTION ACTIVITY SHALL BE IN ACCORDANCE WITH MASSDOT, MBTA & OSHA STANDARDS AND LOCAL REQUIREMENTS.
5. THE CONTRACTOR SHALL PROVIDE 72 HOURS NOTICE TO ALL PRIVATE PROPERTY OWNERS ABUTTING CONSTRUCTION AREAS PRIOR TO COMMENCEMENT OF WORK.
6. ALL WORK PERFORMED WITHIN THE PUBLIC RIGHT-OF-WAY SHALL CONFORM TO APPLICABLE MUNICIPAL AND / OR STATE HIGHWAY STANDARDS.
7. ALL SIGNAGE AND PAVEMENT MARKINGS WITH MUNICIPAL AND STATE HIGHWAY LAYOUT SHALL CONFORM TO THE 2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) DATED MAY 2012.
8. ALL PROPOSED GRANITE BOUNDS AND ANY EXISTING MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE RESET BY A PROFESSIONAL LAND SURVEYOR (PLS) REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS.
9. ALL EXISTING U.S.G.S. DISKS, HIGHWAY BOUNDS, RAILROAD MONUMENTS, PROPERTY BOUNDS, AND CITY BOUNDS SHALL BE PROTECTED AND RAISED TO FINISHED GRADE AS REQUIRED. ANY DAMAGE TO U.S.G.S. DISKS SHALL BE IMMEDIATELY REPORTED TO THE MBTA AND THE U.S. GEOLOGICAL SURVEY AND SHALL BE REPAIRED AT NO COST TO THE AUTHORITY. ANY DAMAGE TO TOWN BOUNDS SHALL BE IMMEDIATELY REPORTED TO THE MBTA AND MASSDOT AND SHALL BE REPAIRED AT NO COST TO THE AUTHORITY. THE CONTRACTOR SHALL INVENTORY ALL SUCH BOUNDS, DISKS, AND MONUMENTS PRIOR TO THE START OF ANY WORK.
10. ALL EXISTING ROADWAY SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
11. TEMPORARY CONSTRUCTION EASEMENT AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO THE ORIGINAL CONDITIONS UNLESS OTHERWISE NOTED AT NO ADDITIONAL COST TO THE PROJECT.
12. AREAS OUTSIDE THE LIMIT OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.

EXISTING CONDITIONS

1. THE CONTRACTOR SHALL CONFIRM EXISTING CONDITIONS AND REPORT ALL DISCREPANCIES BETWEEN PLANS AND ACTUAL CONDITIONS TO THE ENGINEER-OF-RECORD.

UTILITIES

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES, WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL CONTACT "DIG SAFE" 72 HOURS PRIOR TO ANY EXCAVATION PERFORMED ON OR OFF SITE. 1-888-344-7233 AND SHALL COORDINATE LOCATION OF NON "DIG SAFE" MEMBER UTILITIES WITHIN THE TIME FRAME SPECIFIED BY THE UTILITY OWNER.
2. THE CONTRACTOR SHALL MAKE ARRANGEMENTS AND SHALL BE RESPONSIBLE FOR PAYING ANY FEES FOR ANY POLE RELOCATION AND FOR THE ALTERATION OR ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANY.
3. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION, SIZE, INVERTS, AND TYPES OF EXISTING PIPES AT ALL PROPOSED POINTS OF CONNECTION PRIOR TO ORDERING MATERIALS. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE EOR FOR THE RESOLUTION OF THE CONFLICT.
4. ALL EXISTING UTILITIES SHALL BE MAINTAINED IN PLACE AND KEPT OPERATIONAL DURING CONSTRUCTION EXCEPT AS NOTED ON THE CONTRACT DRAWINGS. ANY NECESSARY DISRUPTION TO OR ABANDONMENT OF EXISTING UTILITIES SHALL BE SUBJECT TO THE APPROVAL OF THE MBTA.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ALL UTILITY COMPANIES AND CITIES / TOWNS THAT MAY BE AFFECTED BY ANY PORTION OF THIS CONSTRUCTION AND TO COORDINATE ALL WORK INVOLVING UTILITY COMPANIES OR CITY / TOWN FACILITIES, WHETHER THOSE FACILITIES ARE EXISTING OR PROPOSED. IT IS ALSO THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPORT AND PROTECT EXISTING UTILITIES IN AND AROUND EXCAVATIONS. PROTECTION AND OR SUPPORT SHALL BE CONSIDERED INCIDENTAL WORK AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM BEING INSTALLED.
6. FINAL DISPOSITIONS OF EXISTING UTILITIES SHALL BE VERIFIED WITH RESPECTIVE CONTROLLING AUTHORITY.
7. CONTRACTOR SHALL PROTECT ALL UNDERGROUND DRAINAGE, SEWER, AND UTILITY FACILITIES FROM ALL LOADS DURING CONSTRUCTION. ANY DAMAGE TO THESE FACILITIES RESULTING FROM CONSTRUCTION LOADS WILL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
8. ANY UTILITIES ENCOUNTERED IN THE WORK SHALL BE MAINTAINED AND SUPPORTED IN PLACE THIS WORK SHALL BE INCIDENTAL TO WORK IT PERTAINS TO.
9. ALL UTILITY SURFACE CASTINGS (COVERS, GRATES, GATE BOXES, CLEANOUTS, ETC.) TO REMAIN, SHALL BE ADJUSTED TO THE NEW SURFACE GRADE AS REQUIRED, WHETHER OR NOT CALLED FOR ON THE PLANS.

SITE PREPARATION

1. LOCATIONS OF EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION / DEMOLITION. ALL EXCAVATION WORK IN THE GENERAL VICINITY OF UTILITIES SHALL BE PERFORMED WITH EXTREME CARE.
2. MAINTAIN EXISTING DRAINAGE SYSTEM TO THE GREATEST POSSIBLE EXTENT DURING ALL CONSTRUCTION ACTIVITIES.
3. DEMOLITION TO BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE MASSACHUSETTS STATE BUILDING CODE.
4. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL MEASURES.
5. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT AND DISPOSE OF SEDIMENTS AT AN APPROVED FACILITY.
6. PROTECT ANY ADJOINING STRUCTURES AND SAFEGUARD THE NEIGHBORING AREAS FROM DUST AND DEBRIS.
7. ALL DEMOLISHED MATERIALS, RUBBISH, EXCAVATED MATERIALS AND DEBRIS SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
8. DISPOSAL OF HAZARDOUS WASTE SHALL BE IN ACCORDANCE WITH APPLICABLE CODES, REGULATIONS, AND PROJECT SPECIFICATIONS. ALL DEMOLISHED MATERIALS SHALL BE DISPOSED OF LEGALLY AS PER PROJECT SPECIFICATIONS.
9. REFER TO THE MBTA SPECIFICATIONS FOR DEMOLITION AND SITE PREPARATION REQUIREMENTS.

LAYOUT AND MATERIALS

1. CONTRACTOR SHALL REFER TO MASSDOT AND MBTA STANDARD SPECIFICATIONS AS A BASIS FOR THE DESIGN FOR THE EMERGENCY REPAIR AND REHABILITATION OF THE CHESTNUT HILL AVENUE BUSWAY.
2. DIMENSIONS ARE FROM THE FACE OF WALL AND FACE OF CURB.
3. THE CONTRACTOR SHALL PRESERVE THE TUNNEL CONCRETE PROTECTIVE COURSE. ALL PROPOSED WORK SHALL BE PERFORMED ABOVE THE TUNNEL CONCRETE PROTECTIVE COURSE.
4. CURBING SHALL BE VERTICAL GRANITE CURB (VGC) WITHIN THE SITE UNLESS OTHERWISE INDICATED ON THE PLANS. CURBING ALONG BUS TRANSIT WAY SHALL BE REMOVED AND RESET. WHERE NEW CURB IS REQUIRED TO REPLACE BROKEN OR DAMAGED CURBING ALONG THE TRANSIT WAY, MODIFIED SHALLOW DEPTH GRANITE CURB AS SHOWN IN THE DETAILS SHALL BE PROVIDED OVER TUNNEL SECTION. STANDARD HEIGHT (16"-18") VERTICAL GRANITE CURBING SHALL BE PROVIDED FOR CURBING ALONG THE BUS TRANSIT WAY BEYOND LIMITS OF TUNNEL. GRANITE CURBING WITH A HEIGHT OF 12" SHALL BE USED FOR PROPOSED LANDSCAPED AREAS. THE REVEAL OF THE PROPOSED LANDSCAPE CURBING OVER THE TUNNEL SHALL BE ADJUSTED SUCH THAT THE CURB IS INSTALLED ABOVE THE TUNNEL CONCRETE PROTECTIVE COURSE.
5. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
6. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND AR NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR THE LAYOUT OF THE PROJECT FEATURES.
7. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.

CONSTRUCTION PHASING AND WORK WINDOWS

1. MBTA BUS OPERATIONS MUST BE MAINTAINED AT ALL TIMES.
2. FOR SIDEWALK REPAIRS, AT LEAST ONE ROUTE MUST BE MAINTAINED TO EACH INBOUND / OUTBOUND TRAIN PLATFORM. ALL WORK THAT REQUIRES ACCESSIBLE ROUTE RAMP CLOSURES TO THE TRAIN PLATFORM MUST OCCUR DURING NON-REVENUE HOURS, BETWEEN APPROXIMATELY 12:30 AM TO 5:00 AM.

FINAL DESIGN

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. CAHOON
CIVIL
No. 55393
PROFESSIONAL ENGINEER

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF
RESERVOIR BUSWAY

GENERAL NOTES

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

vhb
101 WALNUT STREET
PO BOX 9151
WATERTOWN, MA 02472
617-924-1770

HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: AS NOTED	RAC	AA	SHK		
DATE: APRIL 13, 2022				SHEET 02 OF 22	

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CONSTRUCTION SPECIFICATIONS

THE CONTRACTOR SHALL REFER TO MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES 2022, MASSDOT CONSTRUCTION STANDARD DETAILS OCTOBER 2017, AND THE MASSDOT QCML AS A BASIS FOR THE DESIGN FOR THE EMERGENCY REPAIR AND REHABILITATION OF THE CHESTNUT HILL AVENUE BUSWAY. WHERE "MASSDOT" IS LISTED IN THE STANDARD SPECIFICATIONS SUBSTITUTE WITH "MBTA". MATERIALS SHALL BE SELECTED FROM THE MASSDOT QCML WHERE LISTED. THE CONTRACTOR SHALL ADHERE TO ALL THE FOLLOWING PORTIONS OF THE SPECIFICATIONS.

CONCRETE FOR SIDEWALK: CONCRETE SHALL BE 4000 PSI 3/4 610 SIDEWALK CONCRETE PER MASSDOT SPECIFICATION SUBSECTION 701 AND 901 AND M4.02.00. CONCRETE SHALL BE SELECTED FROM THE MASSDOT PREAPPROVED MIX DESIGN LIST. WHERE SHALLOW COVER OVER THE EXISTING TUNNEL PROHIBIT INSTALLATION OF GRAVEL SUBBASE, A BOND BREAKER SHALL BE APPLIED BETWEEN NEW CONCRETE SURFACES AND THE TUNNEL CONCRETE PROTECTIVE COURSE.
HTTPS://WWW.MASS.GOV/INFO-DETAILS/CEMENT-CONCRETE-PRODUCERS-APPROVED-MIX-DESIGNS

RAPID SET CONCRETE FOR SIDEWALK REPAIRS AND CONCRETE OVERLAY: SHALL BE SELECTED FROM THE MASSDOT QCML "RAPID SET CONCRETE PATCH MATERIALS (HORIZONTAL)"

CONCRETE SEALER: ALL CONCRETE SHALL BE COATED WITH A CONCRETE SEALER SELECTED FROM MASSDOT QCML "CONCRETE SEALERS (M 9.15.0)"

WELDED WIRE FABRIC: ALL WWF SHALL BE EPOXY COATED AND IN CONFORMANCE WITH ASTM A185. WELDED WIRE FABRIC SHALL LAP SIX INCHES OR ONE SPACE PLUS TWO INCHES WHICHEVER IS LARGER, AND SHALL BE WIRED TOGETHER.

PREFORMED FILLER: PREFORMED EXPANSION JOINT FILLER FOR SIDEWALKS SHALL BE ½" PER MASSDOT SPECIFICATION SUBSECTION 701 AND M9.14.0.

PAINT FOR COLUMN REPAIRS AND COVER PLATE:
THE EXISTING STEEL SHALL BE CLEANED TO SSPC-SP11 AND IMMEDIATELY PRIMED WITH A PRIMER SELECTED FROM THE MBTA SPECIFICATIONS. UPON COMPLETION OF THE STEEL MODIFICATIONS THE REMAINING 2 COATS OF THE THREE COAT SYSTEMS SHALL BE APPLIED.

ALL NEW STEEL SHALL BE CLEANED TO SSPC-SP10 AND IMMEDIATELY PRIMED WITH A PRIMER SELECTED FROM THE MBTA SPECIFICATIONS WITH. AFTER INSTALLATION OF THE STEEL IS COMPLETED THE REMAINING 2 COATS OF THE THREE COAT SYSTEMS SHALL BE APPLIED.

BOTH NEW AND EXISTING STEEL SHALL RECEIVE THE SAME PAINT SYSTEM SELECTED FROM THE LIST BELOW:

SYSTEM A
1. DEVOE CATHACOAT 302H ZINC PRIMER
2. DEVOE DEVRAN 201H EPOXY INTERMEDIATE
3. DEVOE DEVTHANE 379 POLYURETHANE TOPCOAT

SYSTEM B
1. INTERNATIONAL INTERZINC 52 ZINC PRIMER
2. INTERNATIONAL INTERGARD 345 EPOXY INTERMEDIATE
3. INTERNATIONAL INTERTHANE 990HS POLYURETHANE TOPCOAT

SYSTEM C
1. PPG AMERCOAT 68HS ZINC PRIMER
2. PPG AMERLOCK 400 EPOXY INTERMEDIATE
3. PPG AMERCOAT 450H POLYURETHANE TOPCOAT

SYSTEM D
1. SHERWIN WILLIAMS ZINC CLAD IIIHS ZINC PRIMER
2. SHERWIN WILLIAMS MACROPOXY 646 INTERMEDIATE
3. SHERWIN WILLIAMS HI-SOLIDS POLYURETHANE TOPCOAT

SYSTEM E
1. TNEMEC SERIES 90G-1K97 ZINC PRIMER
2. TNEMEC SERIES 161 EPOXY INTERMEDIATE
3. TNEMEC SERIES 73 ENDURASHIELD POLYURETHANE TOPCOAT

GRAVEL BORROW: GRAVEL BORROW FOR SIDEWALK SUBGRADE SHALL CONFORM TO MASSDOT SPECIFICATION SUBSECTION 150 AND M1.03.0 TYPE B.

DENSE GRADED CRUSHED STONE: DENSE GRADED CRUSHED STONE MAY BE REQUIRED AS SUBGRADE MATERIAL FOR SETTING CURB AND PLACING CONCRETE WALKS OVER THE EXISTING TUNNEL CONCRETE PROTECTIVE COURSE. DENSE GRADED CRUSHED STONE SHALL CONFORM TO MASSDOT SPECIFICATION SUBSECTION 402 AND M2.01.7.

HMA PAVEMENT: HMA PAVEMENT SHALL BE SUPERPAVE SURFACE COURSE 12.5-P (SSC-12.5-P), PLACED IN ACCORDANCE WITH MASSDOT SPECIFICATION SUBSECTION 450 AND M3.06.0. ASPHALT EMULSION FOR TACK COAT SHALL CONFORM TO MASSDOT MATERIAL SPECIFICATION M3.03.0. HOT APPLIED PAVEMENT JOINT ADHESIVE SHALL CONFORM TO MASSDOT MATERIAL SPECIFICATION M3.05.4.

GRANITE CURB: GRANITE CURB WORK SHALL CONFORM TO THE RELEVANT SECTIONS OF MASSDOT SPECIFICATION SUBSECTION 501, 580 AND M9.04.1. NEW CURBING ALONG THE BUS TRANSITWAY OVER THE TUNNEL REQUIRED TO REPLACE EXISTING DAMAGED CURBING SHALL CONFORM TO THE MODIFIED SHALLOW DEPTH GRANITE CURB AS SHOWN IN THE CONSTRUCTION DETAILS ON SHEET 18. NEW GRANITE CURB FOR THE PROPOSED LANDSCAPE ISLANDS SHALL HAVE A HEIGHT OF 12 INCHES.

TEMPORARY FENCE: TEMPORARY CONSTRUCTION FENCING IS REQUIRED TO SECURE THE WORKSPACE AND TO PREVENT THE PUBLIC FROM ENTERING THE CONSTRUCTION ZONE. TEMPORARY FENCE SHALL CONFORM TO THE RELEVANT PROVISIONS OF MASSDOT SPECIFICATION SECTION 600.

CROSSWALK PAVEMENT MARKINGS: CROSSWALK PAVEMENT MARKINGS SHALL BE WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT MARKINGS IN CONFORMANCE WITH MASSDOT SPECIFICATION SUBSECTION 860 AND M7.01.03.

MASSDOT QCML:
HTTPS://WWW.MASS.GOV/SERVICE-DETAILS/QUALIFIED-CONSTRUCTION-MATERIALS-LIST-QCML

FINAL DESIGN

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. CAHOON
CIVIL
No. 55393
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EMERGENCY REPAIR OF
RESERVOIR BUSWAY

CONSTRUCTION SPECIFICATIONS

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

vhb
101 WALNUT STREET
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PLAN NO.
SHEET 03 OF 22
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15063-01 RESERVOIR_HD(NOTES).DWG Plotted on Apr-22 4:07 PM

GENERAL ABBREVIATIONS

ABAN	ABANDON
ADJ	ADJUST
APPROX	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
C.I.P.	CAST IN PLACE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS / CONTINUED
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DIA	DIAMETER
DEMO	DEMOLISH
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EOR	ENGINEER OF RECORD
EQ	EQUAL
EXIST (or EX)	EXISTING
EXC	EXCAVATION
FDN.	FOUNDATION
FDP	FULL DEPTH PAVEMENT
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HWY	HIGHWAY
JCT	JUNCTION
LOAM	LOAM BORROW
LSA	LANDSCAPED AREA
LT	LEFT
MAHWL	MEAN AVERAGE HIGH WATER LINE
MAX	MAXIMUM
MB	MAILBOX
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
MOD	MODIFIED
MSE	MECHANICALLY STABILIZED EARTH
NERR	NEW ENGLAND RAILROAD
NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
P.G.L.	PROFILE GRADE LINE
PREV	PREVIOUS/PREVIOUSLY
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PTC	POSITIVE TRACK CONTROL
PVMT	PAVEMENT
R&D	REMOVE AND DISCARD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RD	ROAD
RDWY	ROADWAY
REB	REBUILD
REINF	REINFORCEMENT
REM	REMOVE
REMOD	REMODEL
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD

GENERAL ABBREVIATIONS (CONT)

RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SHLO/S.H.L.O.	STATE HIGHWAY LAYOUT LINE
ST	STREET
STA	STATION
STD	STANDARD
SW	SIDEWALK
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TRANS	TRANSITION
TRM	TURF REINFORCING MAT
TTCP	TEMPORARY TRAFFIC CONTROL PLAN
TYP	TYPICAL
VAR	VARIES
VERT	VERTICAL
VIF	VERIFY IN FIELD
WCR	WHEEL CHAIR RAMP
WP	WORKING POINT
WWF	WELDED WIRE FABRIC
X-SECT	CROSS SECTION

UTILITY ABBREVIATIONS

CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
DI	DROP INLET
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HDW	HEADWALL
HYD	HYDRANT
INV	INVERT
LB	LEACH BASIN
LP	LIGHT POLE
MH	MANHOLE
MW	MONITORING WELL
OHW	OVERHEAD WIRE
PVC	POLYVINYLCHLORIDE PIPE
PWW	PAVED WATER WAY
RCP	REINFORCED CONCRETE PIPE
SMH	SEWER MANHOLE
TSV&B	TAPPING SLEEVE VALVE & BOX
UP	UTILITY POLE
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN

ALIGNMENT & GRADING ABBREVIATIONS

CC	CENTER OF CURVE
HP	HIGH POINT
I.T.	INTERSECTION OF TANGENT
LP	LOW POINT
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PNT	POINT
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
∠PT	ANGLE POINT
R	RADIUS OF CURVATURE
T	TANGENT DISTANCE OF CURVE
TAN	TANGENT
25.45	SPOT ELEVATION

TRAFFIC & SIGNAL ABBREVIATIONS

AADT	ANNUAL AVERAGE DAILY TRAFFIC
CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
COND	CONDUIT
CW	CROSS WALK
DW	STEADY DON'T WALK - PORTLAND ORANGE
DHV	DESIGN HOURLY VOLUME
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
HH	HAND HOLE
OL	OVERLAP
PB	PULL BOX
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
SL	STOP LINE
T	TRUCK %
TS OR TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW

FINAL DESIGN

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SHEET 04 OF 22

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GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER
CB	CB	CATCH BASIN/DOUBLE CATCH BASIN
		CATCH BASIN CURB INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
C	C	CABLE MANHOLE
D	D	DRAINAGE MANHOLE
E	E	ELECTRIC MANHOLE
G	G	GAS MANHOLE
M	M	MISC MANHOLE
S	S	SEWER MANHOLE
T	T	TELEPHONE MANHOLE
W	W	WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE WITH SINGLE LIGHT
UPL	UPL	UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
100 99		CONTOURS (ON-THE-GROUND SURVEY DATA)
100 99		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT
		SECTION MARK

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
	*	EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	20'	MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
	20'	MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE
	CW	CROSSWALK
	SWL	SOLID WHITE LINE
	SYL	SOLID YELLOW LINE
	BWL	BROKEN WHITE LINE
	BYL	BROKEN YELLOW LINE
	DWL	DOTTED WHITE LINE
	DYL	DOTTED YELLOW LINE
	DWLEx	DOTTED WHITE LINE EXTENSION
	DYLEx	DOTTED YELLOW LINE EXTENSION
	DBWL	DOUBLE WHITE LINE
	DBYL	DOUBLE YELLOW LINE

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. CAHOON
CIVIL
No. 55393
PROFESSIONAL ENGINEER

FINAL DESIGN

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF
RESERVOIR BUSWAY

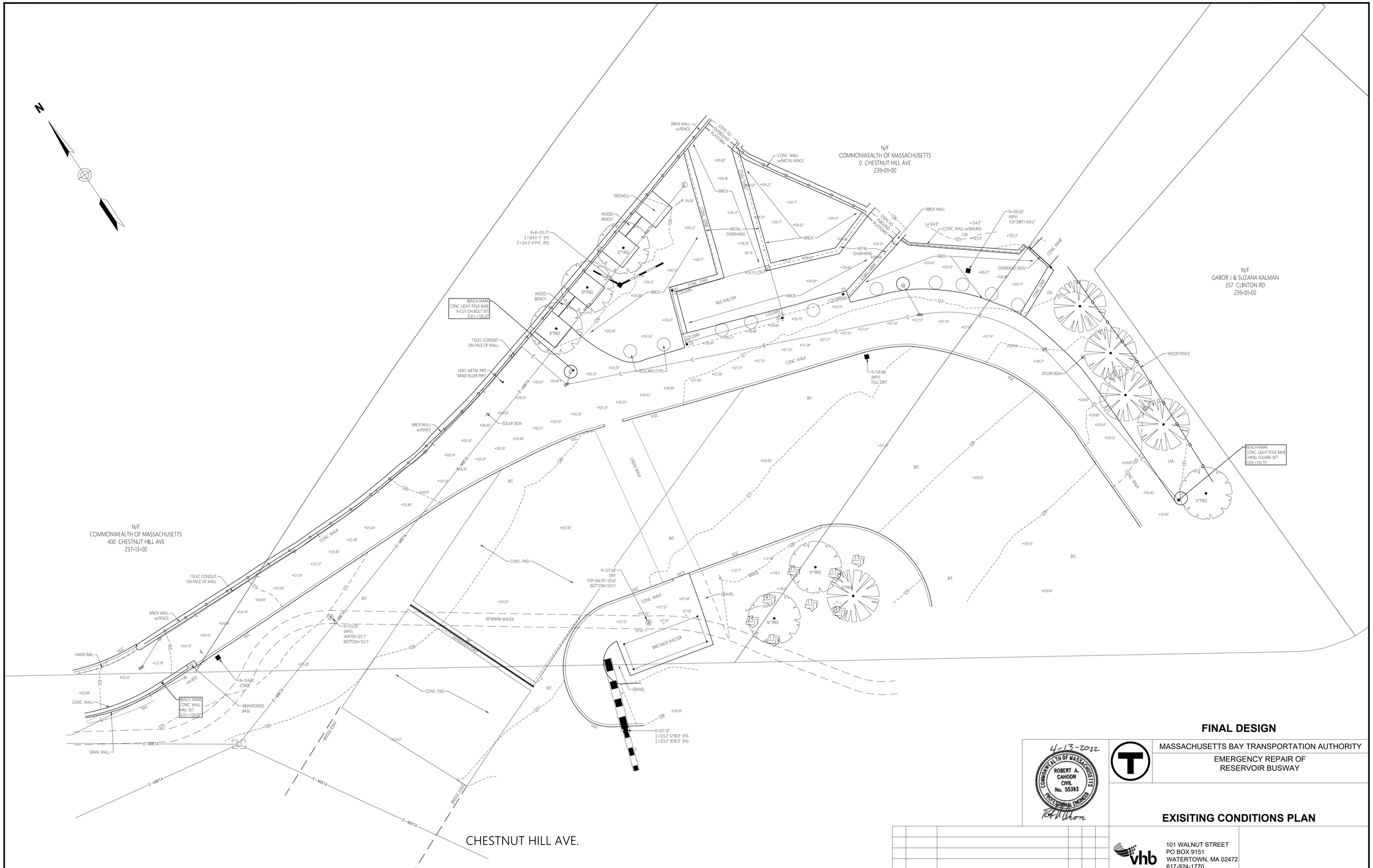
SYMBOLS

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

vhb
101 WALNUT STREET
PO BOX 9151
WATERTOWN, MA 02472
617-924-1770

HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: AS NOTED	RAC	AA	SHK		.
DATE: APRIL 13, 2022				SHEET 05 OF 22	

15063-01 RESERVOIR_HD(NOTES).DWG Plotted on Apr-22 4:07 PM



FINAL DESIGN

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. CAHOON
CIVIL
No. 55393
PROFESSIONAL ENGINEER

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF
RESERVOIR BUSWAY

EXISITING CONDITIONS PLAN

vhb
101 WALNUT STREET
PO BOX 9151
WATERTOWN, MA 02472
617-924-1770

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

0 10 20 30 40
SCALE: 1" = 10'

	DES. BY	DR. BY	CHK. BY		
HORIZ: AS NOTED	RAC	AA	SHK	PLAN NO.	ISSUE
VERT: AS NOTED					.
DATE: APRIL 13, 2022				SHEET 06 OF 22	

15063-01 RESERVOIR (EXI).DWG Plotted on Apr-22 4:08 PM

TP #1 - BRICK SURFACE
- TEST PIT DEPTH = 12" BELOW GRADE
- WWF FOUND AT 9" BELOW GRADE

TP #2 - CONCRETE SURFACE - CONCRETE STRIP
- TEST PIT DEPTH = 7" BELOW GRADE
- COLUMN COLLAR LOCATED AT 6" BELOW GRADE
- REBAR CAGE LOCATED AT 6" BELOW GRADE
- CONCRETE FULL DEPTH

TP #3 - CONCRETE SURFACE - CONCRETE STRIP
- TEST PIT DEPTH = 9.5" BELOW GRADE
- EXPOSED COLUMN STEEL BASE PLATE
- COLUMN COLLAR LOCATED AT 4.75" BELOW GRADE

TP #4 - CONCRETE SURFACE - CONCRETE STRIP
- TEST PIT DEPTH = 12" BELOW GRADE
- CONCRETE FULL DEPTH
- COLUMN COLLAR LOCATED AT 4.75" BELOW GRADE
- REBAR CAGE LOCATED 7" BELOW GRADE
- COLUMN COLLAR IS 1"

TP #5A - BRICK SURFACE
- TEST PIT LOCATED ADJACENT TO COLUMN
- TEST PIT DEPTH = 10" BELOW GRADE
- COLUMN COLLAR LOCATED 4" BELOW GRADE
- NO COLUMN BASE PLATE FOUND
- FULL DEPTH CONCRETE

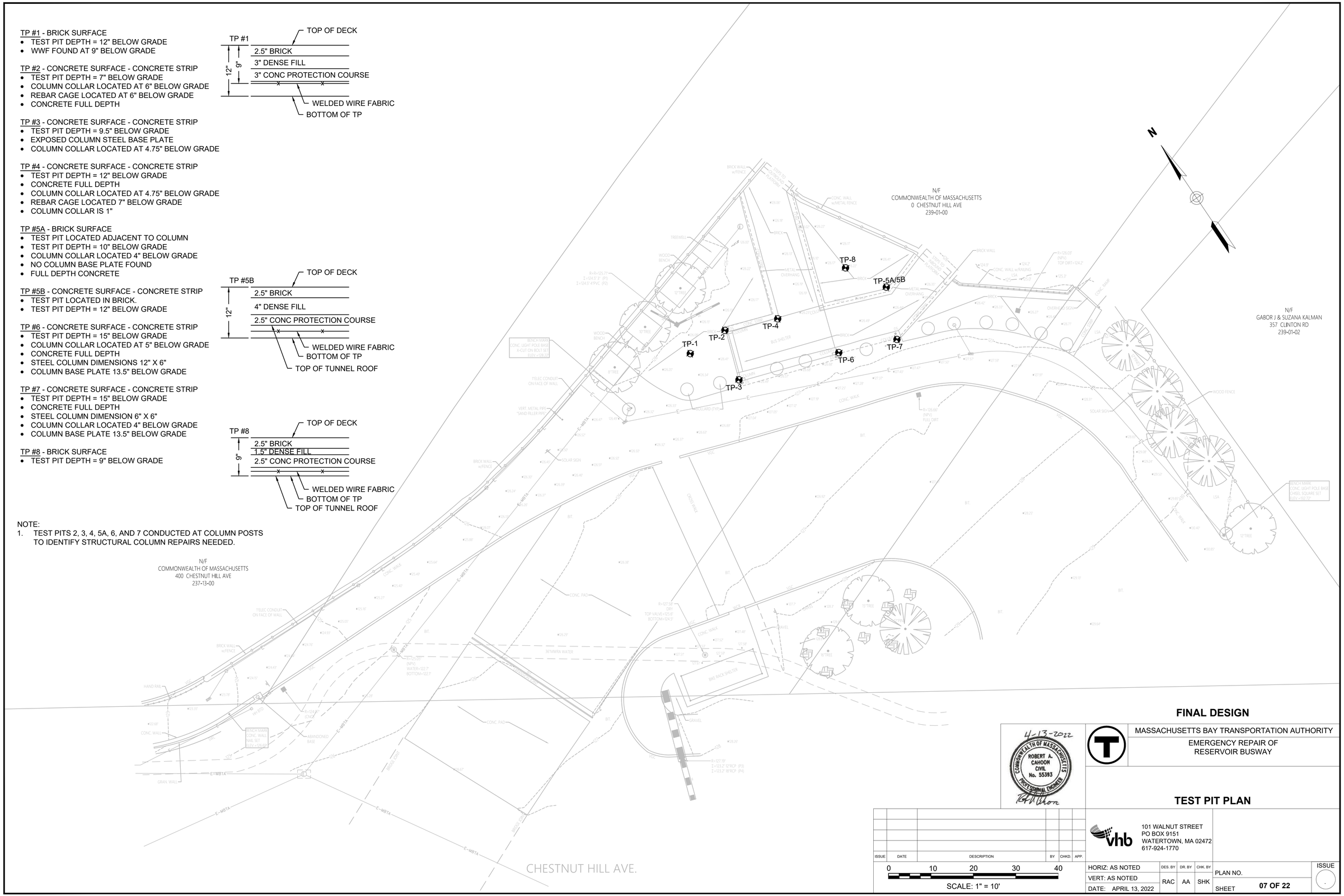
TP #5B - CONCRETE SURFACE - CONCRETE STRIP
- TEST PIT LOCATED IN BRICK.
- TEST PIT DEPTH = 12" BELOW GRADE

TP #6 - CONCRETE SURFACE - CONCRETE STRIP
- TEST PIT DEPTH = 15" BELOW GRADE
- COLUMN COLLAR LOCATED AT 5" BELOW GRADE
- CONCRETE FULL DEPTH
- STEEL COLUMN DIMENSIONS 12" X 6"
- COLUMN BASE PLATE 13.5" BELOW GRADE

TP #7 - CONCRETE SURFACE - CONCRETE STRIP
- TEST PIT DEPTH = 15" BELOW GRADE
- CONCRETE FULL DEPTH
- STEEL COLUMN DIMENSION 6" X 6"
- COLUMN COLLAR LOCATED 4" BELOW GRADE
- COLUMN BASE PLATE 13.5" BELOW GRADE

TP #8 - BRICK SURFACE
- TEST PIT DEPTH = 9" BELOW GRADE

NOTE:
1. TEST PITS 2, 3, 4, 5A, 6, AND 7 CONDUCTED AT COLUMN POSTS TO IDENTIFY STRUCTURAL COLUMN REPAIRS NEEDED.



FINAL DESIGN

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
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No. 55393
PROFESSIONAL ENGINEER

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF RESERVOIR BUSWAY

TEST PIT PLAN

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

vhb
101 WALNUT STREET
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WATERTOWN, MA 02472
617-924-1770

0 10 20 30 40
SCALE: 1" = 10'

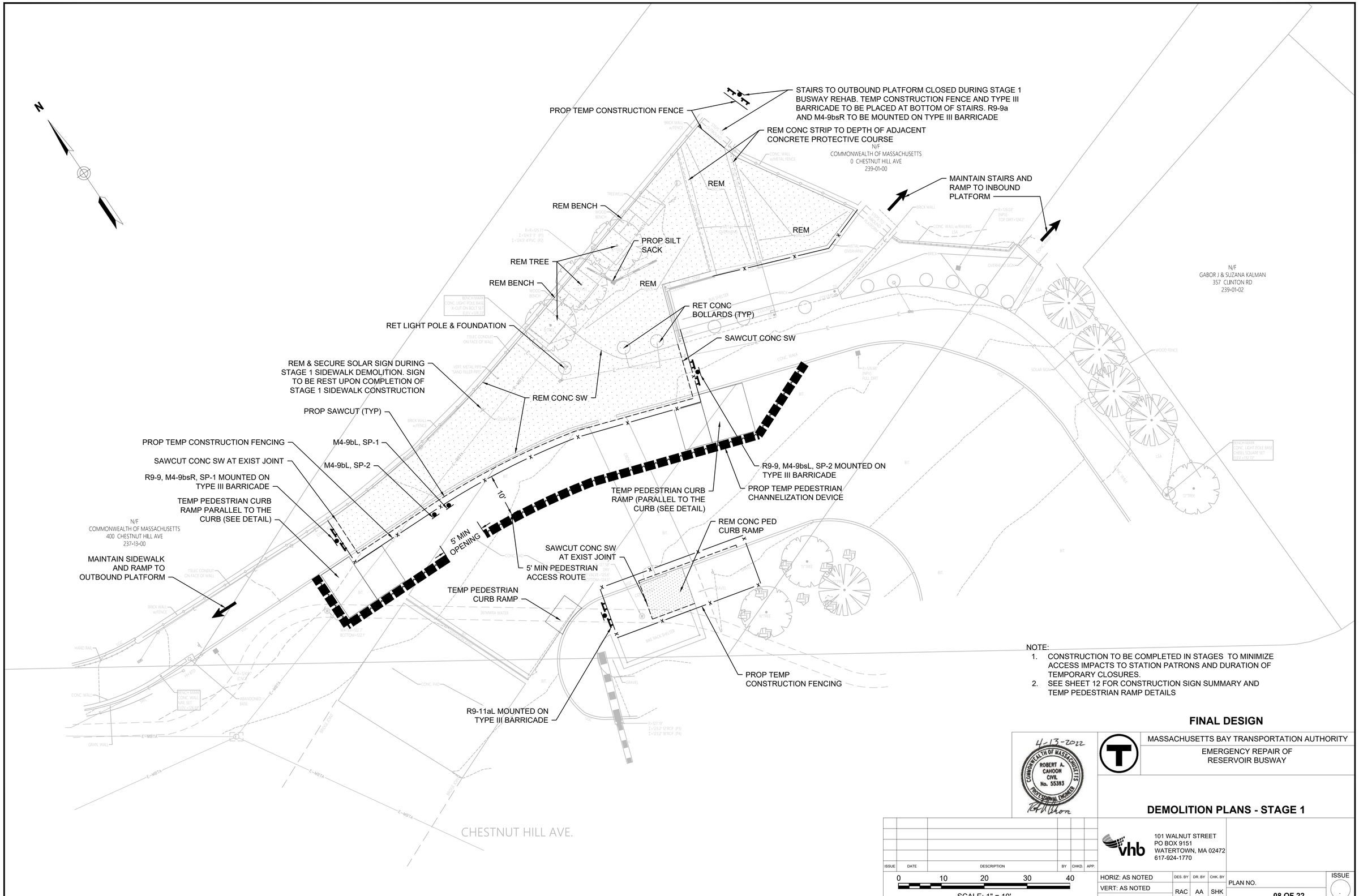
	DES. BY	DR. BY	CHK. BY
HORIZ: AS NOTED			
VERT: AS NOTED	RAC	AA	SHK
DATE: APRIL 13, 2022			

PLAN NO.

SHEET 07 OF 22

ISSUE .

15063-01 RESERVOIR (TEST PITS).DWG Plotted on Apr-22 4:08 PM



NOTE:
1. CONSTRUCTION TO BE COMPLETED IN STAGES TO MINIMIZE ACCESS IMPACTS TO STATION PATRONS AND DURATION OF TEMPORARY CLOSURES.
2. SEE SHEET 12 FOR CONSTRUCTION SIGN SUMMARY AND TEMP PEDESTRIAN RAMP DETAILS

FINAL DESIGN

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
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DEMOLITION PLANS - STAGE 1

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

0 10 20 30 40
SCALE: 1" = 10'

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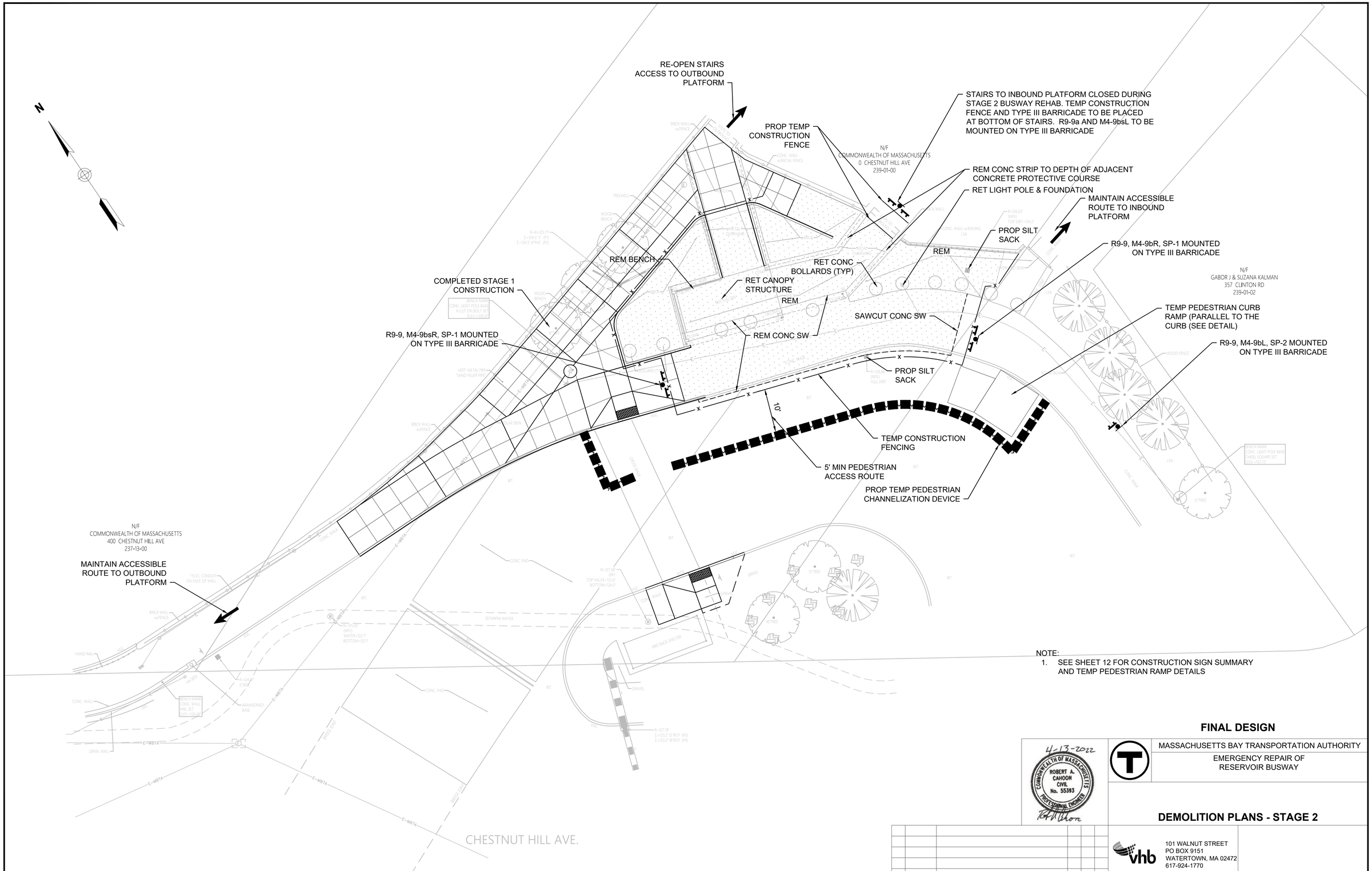
DATE: APRIL 13, 2022				SHEET 08 OF 22	

15083-01 RESERVOIR HD(DEMO).DWG Plotted on Apr-22 4:09 PM



NOTE:
1. SEE SHEET 12 FOR CONSTRUCTION SIGN SUMMARY AND TEMP PEDESTRIAN RAMP DETAILS

FINAL DESIGN

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. CAHOON
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MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF RESERVOIR BUSWAY

DEMOLITION PLANS - STAGE 2

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

vhb
101 WALNUT STREET
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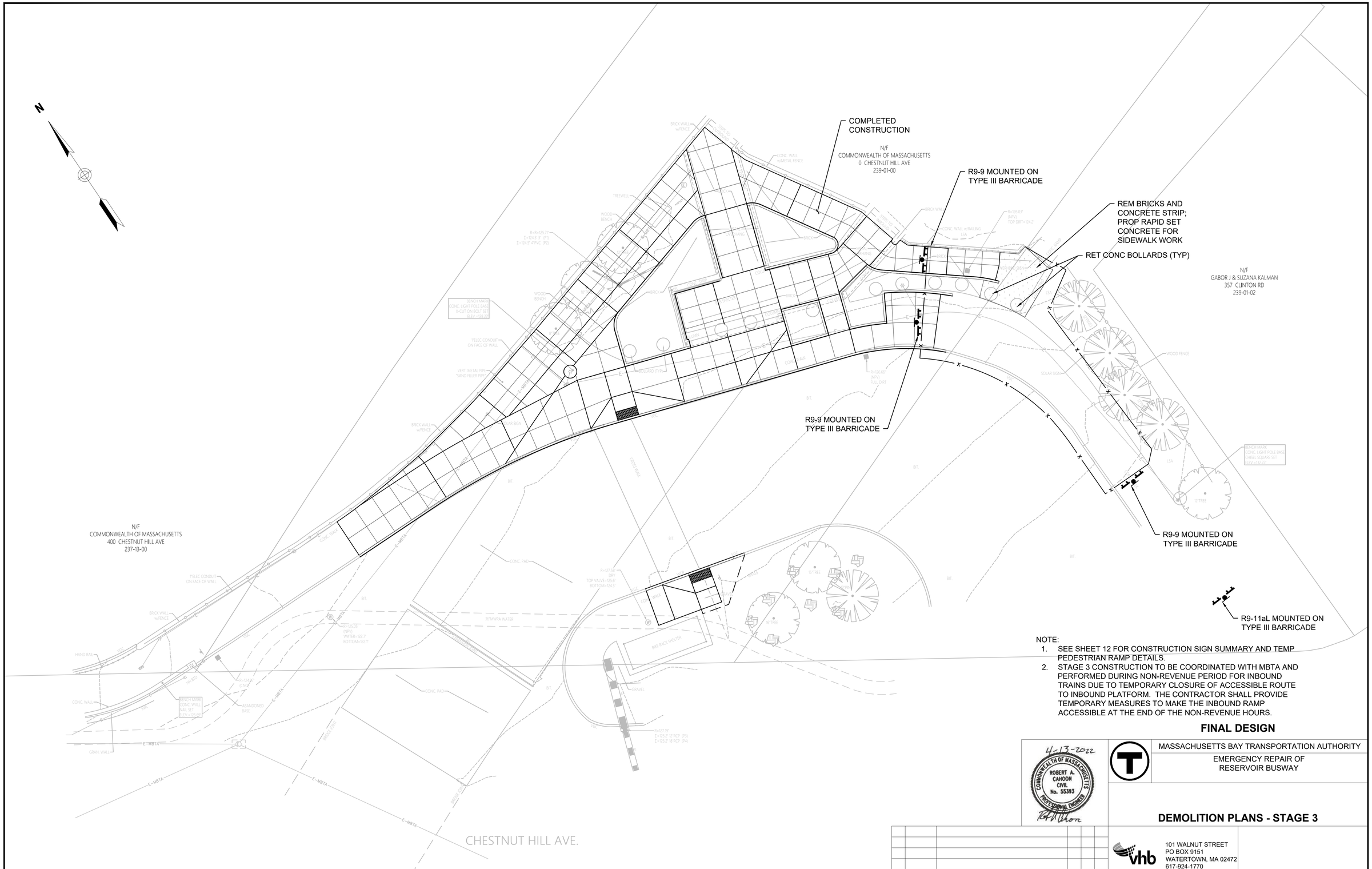
0 10 20 30 40
SCALE: 1" = 10'

HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: AS NOTED	RAC	AA	SHK		
DATE: APRIL 13, 2022				SHEET 09 OF 22	.

15083-01 RESERVOIR HD(DEMO).DWG Plotted on Apr-22 4:09 PM



NOTE:

1. SEE SHEET 12 FOR CONSTRUCTION SIGN SUMMARY AND TEMP PEDESTRIAN RAMP DETAILS.
2. STAGE 3 CONSTRUCTION TO BE COORDINATED WITH MBTA AND PERFORMED DURING NON-REVENUE PERIOD FOR INBOUND TRAINS DUE TO TEMPORARY CLOSURE OF ACCESSIBLE ROUTE TO INBOUND PLATFORM. THE CONTRACTOR SHALL PROVIDE TEMPORARY MEASURES TO MAKE THE INBOUND RAMP ACCESSIBLE AT THE END OF THE NON-REVENUE HOURS.

FINAL DESIGN

4-13-2022
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MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF RESERVOIR BUSWAY

DEMOLITION PLANS - STAGE 3

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

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0 10 20 30 40
SCALE: 1" = 10'

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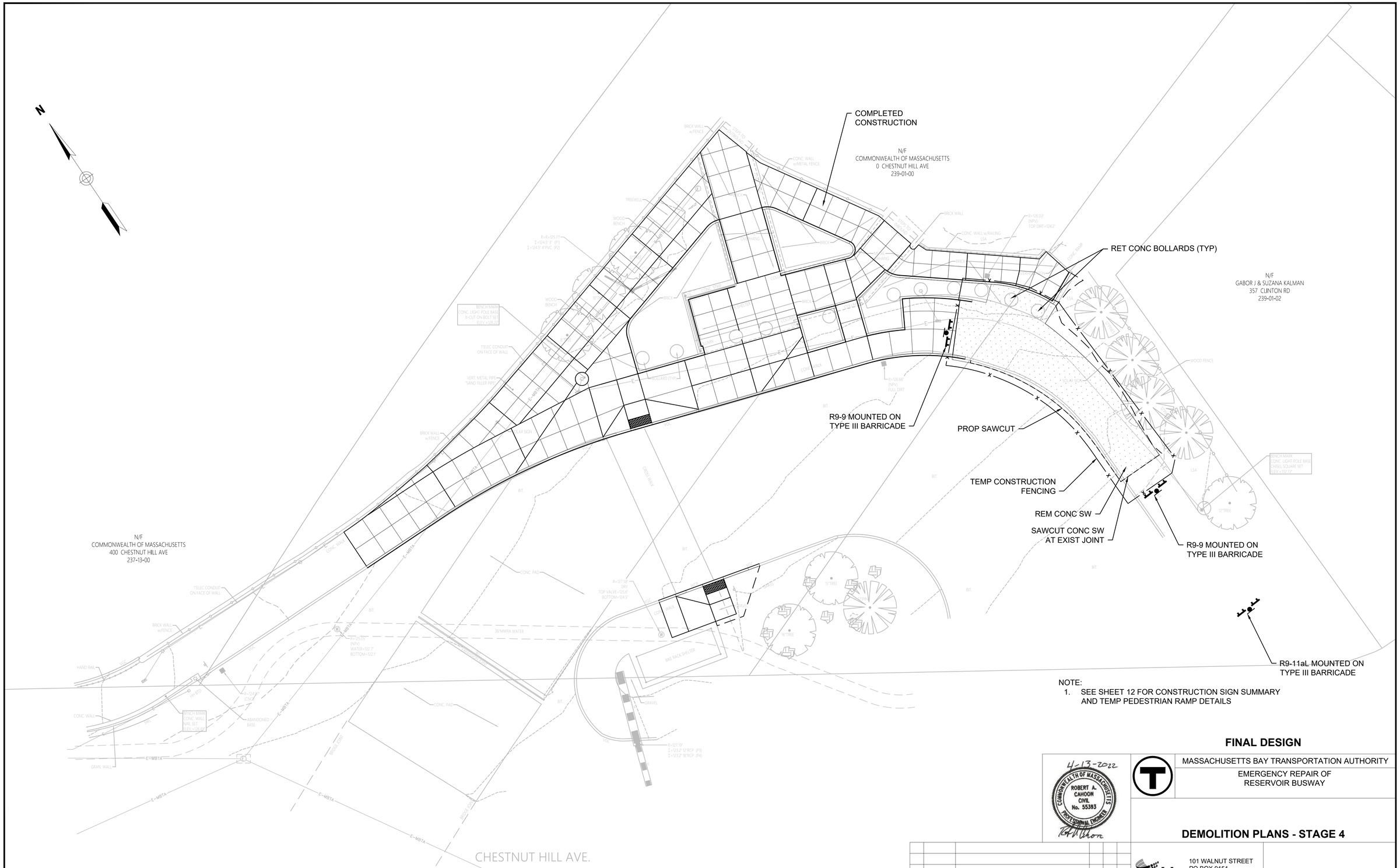
DATE: APRIL 13, 2022				SHEET 10 OF 22	

15083-01 RESERVOIR HD(DEMO).DWG Plotted on Apr-22 4:09 PM



NOTE:
1. SEE SHEET 12 FOR CONSTRUCTION SIGN SUMMARY AND TEMP PEDESTRIAN RAMP DETAILS

FINAL DESIGN

4-13-2022
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MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF RESERVOIR BUSWAY

DEMOLITION PLANS - STAGE 4

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

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0 10 20 30 40
SCALE: 1" = 10'

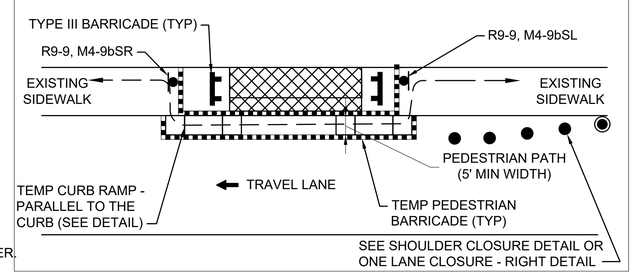
HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: AS NOTED	RAC	AA	SHK		
DATE: APRIL 13, 2022				SHEET 11 OF 22	

15083-01 RESERVOIR HD(DEMO).DWG Plotted on Apr-22 4:09 PM

NOTES:

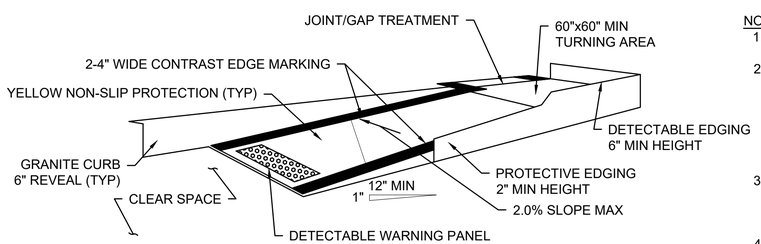
1. ADDITIONAL ADVANCE WARNING SIGNS MAY BE NECESSARY AS DETERMINED BY THE ENGINEER.
2. CONTROLS FOR PEDESTRIAN TRAFFIC ONLY, ARE SHOWN. VEHICULAR TRAFFIC SHALL BE MAINTAINED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. → — → INDICATES DIRECTION OF PEDESTRIAN TRAVEL.
5. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, THE APPROPRIATE SIGNS SHALL BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AT EXISTING OR TEMPORARY CROSSWALKS AS DIRECTED BY THE ENGINEER.
6. PROPOSED TEMPORARY CROSSWALKS SHALL BE 12" WIDE SURFACE APPLIED TAPE OR REFLECTORIZED PAINT AS DIRECTED BY THE ENGINEER.
7. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MAAB AND ADAAG REQUIREMENTS AND INCLUDE THE USE OF A COMPLIANT TEMPORARY PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM AT ALL TIMES.
8. CONTRACTOR SHALL MAINTAIN AS WIDE OF A PEDESTRIAN ACCESS AS POSSIBLE AT ALL TIMES. EXCEPT WHERE NECESSARY, THE CONTRACTOR MAY TEMPORARILY REDUCE PEDESTRIAN PATHWAYS TO 4 FEET IN WIDTH (EXCLUDING CURB) FOR NO MORE THAN 200 LINEAR FEET AT A TIME IN ACCORDANCE WITH ALL STANDARDS. A 5' x 5' PASSING AREA SHALL BE PROVIDED IN INTERVALS NOT EXCEEDING 200 FEET.
9. TEMPORARY WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MASSDOT, MAAB, AND ADAAG REQUIREMENTS.
10. TEMPORARY PEDESTRIAN BARRICADE SHALL BE PAID FOR UNDER ITEM 852.11 TEMPORARY PEDESTRIAN BARRICADE.
11. TEMPORARY PEDESTRIAN CURB RAMPS SHALL BE PAID FOR UNDER ITEM 852.12 TEMPORARY PEDESTRIAN CURB RAMP.

PEDESTRIAN BYPASS TYPE I

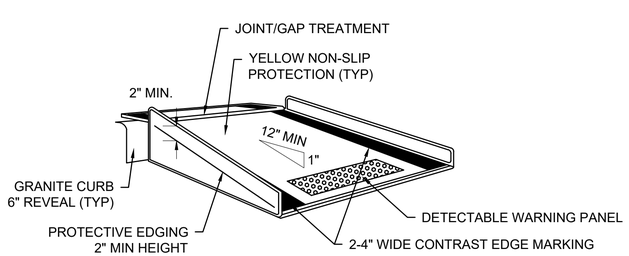


PEDESTRIAN BYPASS DETAIL

SCALE: NTS DWG: TTCP3a DATE: NOVEMBER 2020



TEMPORARY CURB RAMP-PARALLEL TO CURB



TEMPORARY CURB RAMP-PERPENDICULAR TO CURB

NOTES:

1. CURB RAMPS SHALL BE 60" MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2" MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
3. DETECTABLE EDGING WITH 6" MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
5. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
6. CLEAR SPACE OF 48"x48" MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5" WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5" LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25" HIGH, AND BEVELED AT 1:2 BETWEEN 0.25" AND 0.5" HEIGHT.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.

TEMPORARY CURB RAMPS

SCALE: NTS DWG: TTCP3b DATE: NOVEMBER 2020

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			COLOR		
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	BACK-GROUND	LEGEND	BORDER
R9-9	24"	12"	SIDEWALK CLOSED	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			WHITE	BLACK	BLACK
R9-9a	24"	12"	STAIRS CLOSED	3" D 3" D	2.125" 1.75" 2.125"	N/A	WHITE	BLACK	BLACK
R9-11aL	24"	12"	SIDEWALK CLOSED ← CROSS HERE	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			WHITE	BLACK	BLACK
R9-11aR	24"	12"	SIDEWALK CLOSED → CROSS HERE				WHITE	BLACK	BLACK
M4-9bL	30"	24"	DETOUR ←				FLUOR-ESCENT ORANGE	BLACK	BLACK
M4-9bR	30"	24"	DETOUR →				FLUOR-ESCENT ORANGE	BLACK	BLACK
M4-9bsL	30"	24"	DETOUR ↖				FLUOR-ESCENT ORANGE	BLACK	BLACK
M4-9bsR	30"	24"	DETOUR ↗				FLUOR-ESCENT ORANGE	BLACK	BLACK
SP-1	24"	12"	INBOUND PLATFORM	3" D 3" D	2.125" 1.75" 2.125"	N/A	FLUOR-ESCENT ORANGE	BLACK	BLACK
SP-2	24"	12"	OUTBOUND PLATFORM	↓	↓	↓	FLUOR-ESCENT ORANGE	BLACK	BLACK

NOTES:

1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1977 MASSHIGHWAY DEPARTMENT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED, FOR SIGNS AND SUPPORTS; THE MASSHIGHWAY DEPARTMENT SIGN LISTINGS 1993 EDITION, AS AMENDED; THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR MOUNTING REQUIREMENTS; AND THE 2017 MassDOT STANDARD SIGNS BOOK, AS AMENDED.
2. ALL SIGNS SHOWN GRAPHICALLY FOR INFORMATION ONLY. SIGN VENDOR SHALL FABRICATE ALL SIGNS IN ACCORDANCE WITH THE APPLICABLE STANDARDS.

FINAL DESIGN

4-13-2022
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MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF RESERVOIR BUSWAY

PEDESTRIAN BYPASS PLAN

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

vhb
101 WALNUT STREET
PO BOX 9151
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HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
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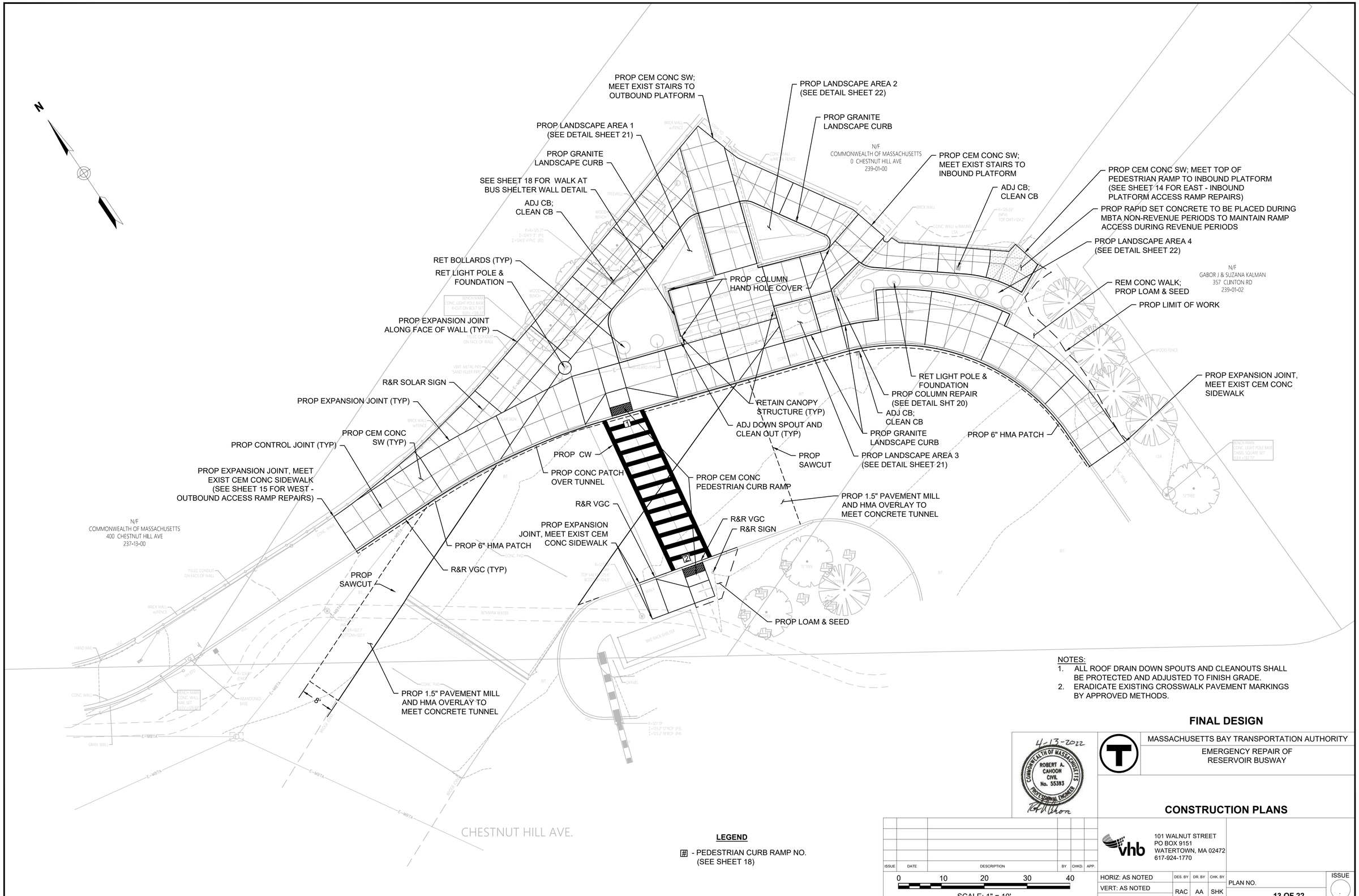
DATE: APRIL 13, 2022				SHEET 12 OF 22	

15063-01 RESERVOIR (SIGNSUM).DWG Plotted on Apr-22 4:09 PM



NOTES:
1. ALL ROOF DRAIN DOWN SPOUTS AND CLEANOUTS SHALL BE PROTECTED AND ADJUSTED TO FINISH GRADE.
2. ERADICATE EXISTING CROSSWALK PAVEMENT MARKINGS BY APPROVED METHODS.

LEGEND

[#] - PEDESTRIAN CURB RAMP NO. (SEE SHEET 18)

FINAL DESIGN

4-13-2022
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EMERGENCY REPAIR OF RESERVOIR BUSWAY

CONSTRUCTION PLANS

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

0 10 20 30 40
SCALE: 1" = 10'

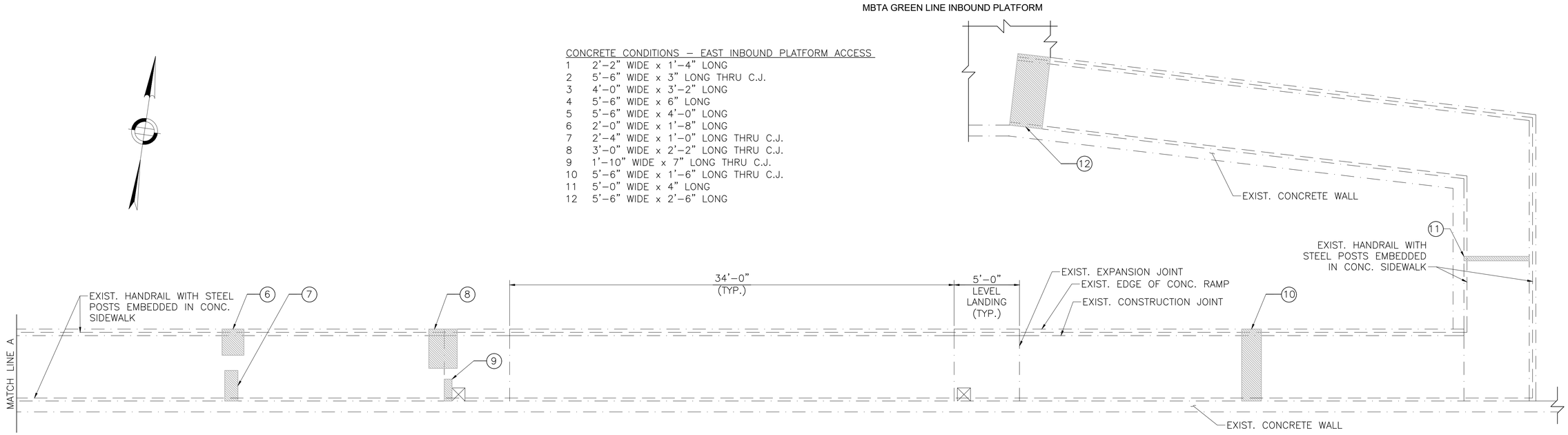
vhb
101 WALNUT STREET
PO BOX 9151
WATERTOWN, MA 02472
617-924-1770

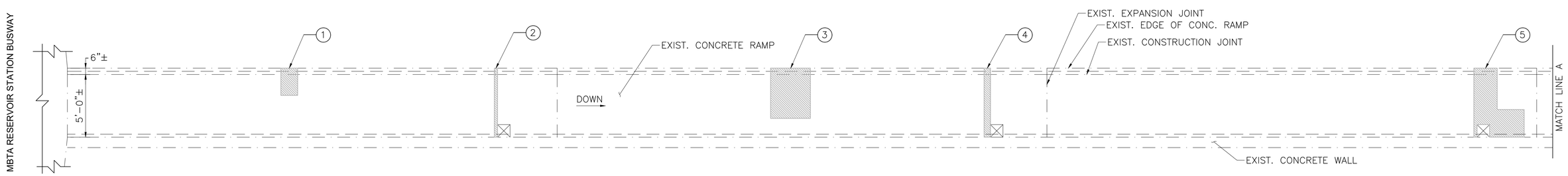
HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: AS NOTED	RAC	AA	SHK		
DATE: APRIL 13, 2022				SHEET 13 OF 22	

15063-01 RESERVOIR HD(GEN).DWG Plotted on Apr-22 4:09 PM

CONCRETE CONDITIONS – EAST INBOUND PLATFORM ACCESS

1	2'–2" WIDE x 1'–4" LONG
2	5'–6" WIDE x 3" LONG THRU C.J.
3	4'–0" WIDE x 3'–2" LONG
4	5'–6" WIDE x 6" LONG
5	5'–6" WIDE x 4'–0" LONG
6	2'–0" WIDE x 1'–8" LONG
7	2'–4" WIDE x 1'–0" LONG THRU C.J.
8	3'–0" WIDE x 2'–2" LONG THRU C.J.
9	1'–10" WIDE x 7" LONG THRU C.J.
10	5'–6" WIDE x 1'–6" LONG THRU C.J.
11	5'–0" WIDE x 4" LONG
12	5'–6" WIDE x 2'–6" LONG





NOTES:

1. THE CONCRETE CONDITIONS ONLY ARE SHOWN. AREA OF CONCRETE REPAIR IS LARGER PER THE REPAIR DETAILS. SEE REPAIR DETAILS ON SHEET 20. CONCRETE CONDITIONS INCLUDE DELAMINATED CONCRETE, SPALLED CONCRETE, PATCHED CONCRETE.
2. STEEL HANDRAIL POSTS EMBEDDED IN THE CONCRETE RAMP ARE NOT SHOWN. CONCRETE REPAIRS MAY INCLUDE AREA AROUND POSTS. POSTS SHALL BE PROTECTED FROM DAMAGE AND REMAIN IN–PLACE.
3. CONCRETE REPAIR AREAS SHALL BE MARKED IN THE FIELD BY THE CONTRACTOR. THE ENGINEER SHALL VERIFY ALL REPAIR AREAS PRIOR TO DEMOLITION. THE ENGINEER MAY INCREASE REPAIR AREAS TO INCORPORATE ALL CONDITIONS.
4. THE EXISTING CONSTRUCTION JOINTS, CONTRACTION JOINTS, AND EXPANSION JOINTS ARE NOT ALL SHOWN.
5. CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING ELECTRICAL BOXES OR CONDUIT EMBEDDED IN CONCRETE.
6. CONDUIT JUNCTION BOX IS DAMAGED, REPAIR OF JUNCTION BOX IS NOT IN THIS SCOPE OF WORK.
7. ALL CONCRETE SIDEWALK REPAIRS SHALL BE PERFORMED DURING NON–REVENUE HOURS AND THE CONCRETE REPAIR MATERIAL SHALL BE RAPID SET CONCRETE, SEE SHEET 03.

EAST - INBOUND PLATFORM ACCESS RAMP

SCALE: $\frac{1}{4}$" = 1'–0"

LEGEND:

- ☒ —EXIST. EMBEDDED JUNCTION BOX
- ▨ —EXIST. CONCRETE CONDITION TO BE REPAIRED
- (#) —CONCRETE REPAIR NUMBER

COMMONWEALTH OF MASSACHUSETTS
STEPHEN JAHNES
No. 50847
REGISTERED PROFESSIONAL ENGINEER
5/22/2022
Stephen Jahnes

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

FINAL DESIGN

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR
OF RESERVOIR BUSWAY

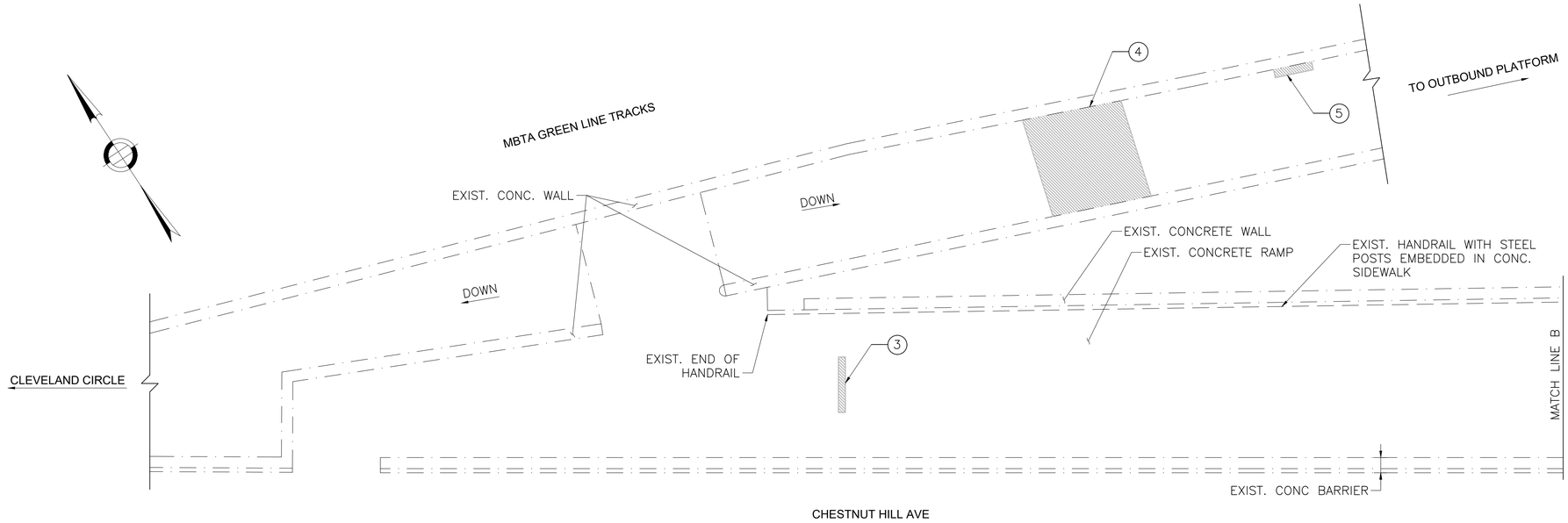
MBTA GREEN LINE D - BRANCH
CHESTNUT HILL AVENUE BUSWAY

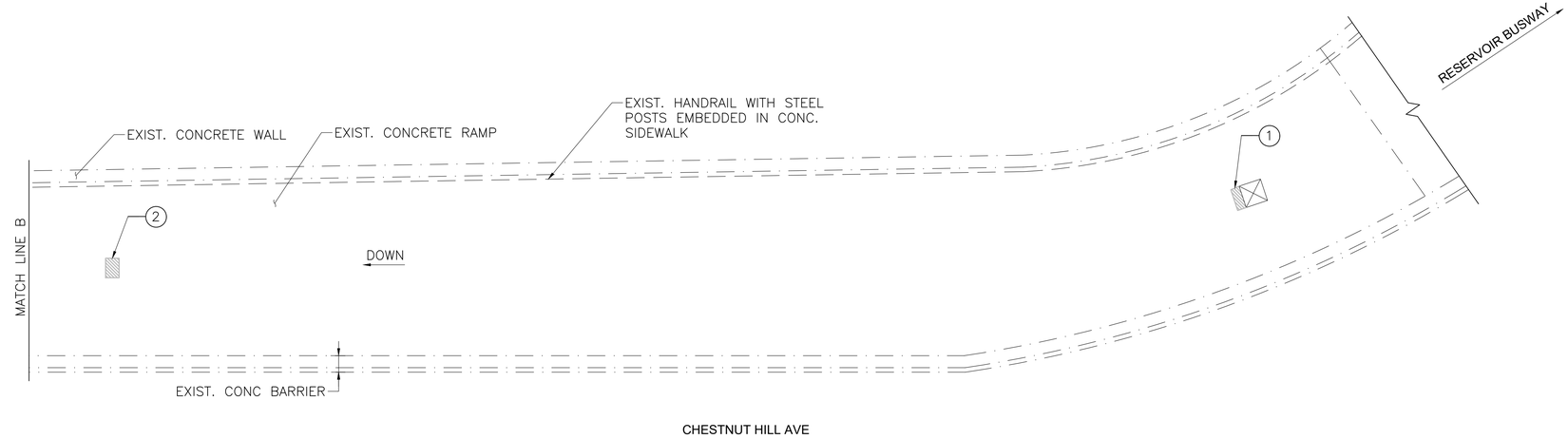
CONSTRUCTION PLANS
EAST - INBOUND PLATFORM ACCESS RAMP

vhb
101 WALNUT STREET
PO BOX 9151
WATERTOWN, MA 02472
617-924-1770

	DES. BY	DR. BY	CHK. BY		
HORIZ: AS NOTED	SJ	SJ	KR	PLAN NO.	ISSUE
VERT: AS NOTED					
DATE: APRIL 13, 2022				SHEET 14 OF 22	

15063-01 RESERVOIR_HD(STRUCTURAL).DWG Plotted on Apr-22 1:29 PM





NOTES:

1. FOR NOTES, SEE SHEET 14.

CONCRETE CONDITIONS – WEST OUTBOUND PLATFORM ACCESS RAMP:

1. 1'–3" WIDE x 6" LONG (SEE NOTE 6)
2. 1'–1" WIDE x 9" LONG
3. 3'–4" WIDE x 5" LONG
4. 6'–0" WIDE x 4'–0" LONG
5. 6" WIDE x 2'–4" LONG

WEST - OUTBOUND PLATFORM ACCESS RAMP

NOT TO SCALE

LEGEND:

- EXIST. EMBEDDED JUNCTION BOX
- EXIST. CONCRETE CONDITION TO BE REPAIRED
- (#) CONCRETE REPAIR NUMBER

COMMONWEALTH OF MASSACHUSETTS
STEPHEN JAHNES
No. 50847
REGISTERED PROFESSIONAL ENGINEER
4/13/2022

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

FINAL DESIGN

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR
OF RESERVOIR BUSWAY

MBTA GREEN LINE D - BRANCH
CHESTNUT HILL AVENUE BUSWAY

CONSTRUCTION PLANS
WEST - OUTBOUND PLATFORM ACCESS RAMP

vhb
101 WALNUT STREET
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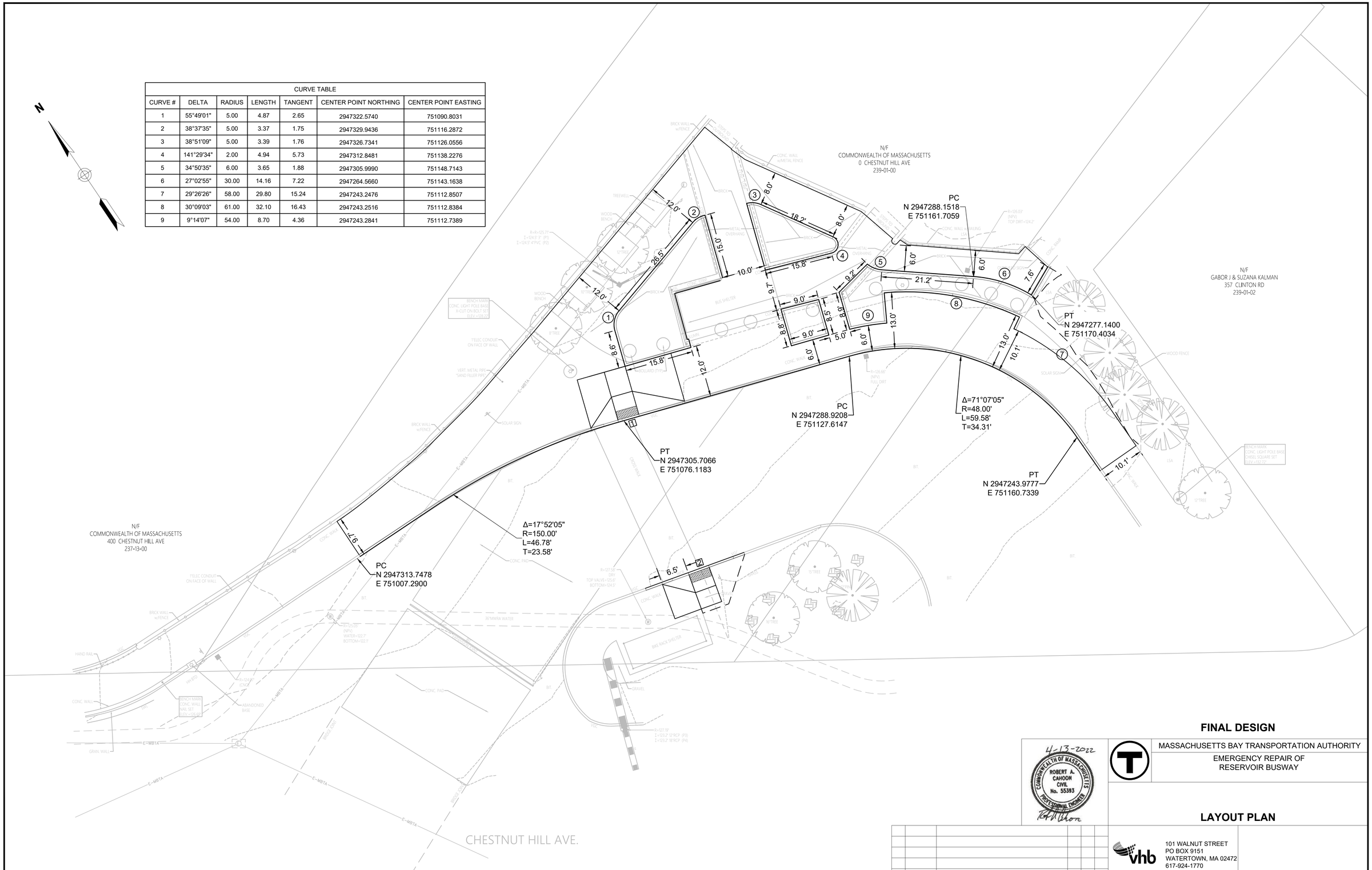
617-924-1770

HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: AS NOTED	SJ	SJ	KR		
DATE: APRIL 13, 2022				SHEET 15 OF 22	

15063-01 RESERVOIR_HD(STRUCTURAL).DWG Plotted on Apr-22 4:10 PM

CURVE TABLE						
CURVE #	DELTA	RADIUS	LENGTH	TANGENT	CENTER POINT NORTHING	CENTER POINT EASTING
1	55°49'01"	5.00	4.87	2.65	2947322.5740	751090.8031
2	38°37'35"	5.00	3.37	1.75	2947329.9436	751116.2872
3	38°51'09"	5.00	3.39	1.76	2947326.7341	751126.0556
4	141°29'34"	2.00	4.94	5.73	2947312.8481	751138.2276
5	34°50'35"	6.00	3.65	1.88	2947305.9990	751148.7143
6	27°02'55"	30.00	14.16	7.22	2947264.5660	751143.1638
7	29°26'26"	58.00	29.80	15.24	2947243.2476	751112.8507
8	30°09'03"	61.00	32.10	16.43	2947243.2516	751112.8384
9	9°14'07"	54.00	8.70	4.36	2947243.2841	751112.7389



FINAL DESIGN

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. CAHOON
CIVIL
No. 55393
PROFESSIONAL ENGINEER

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF
RESERVOIR BUSWAY

LAYOUT PLAN

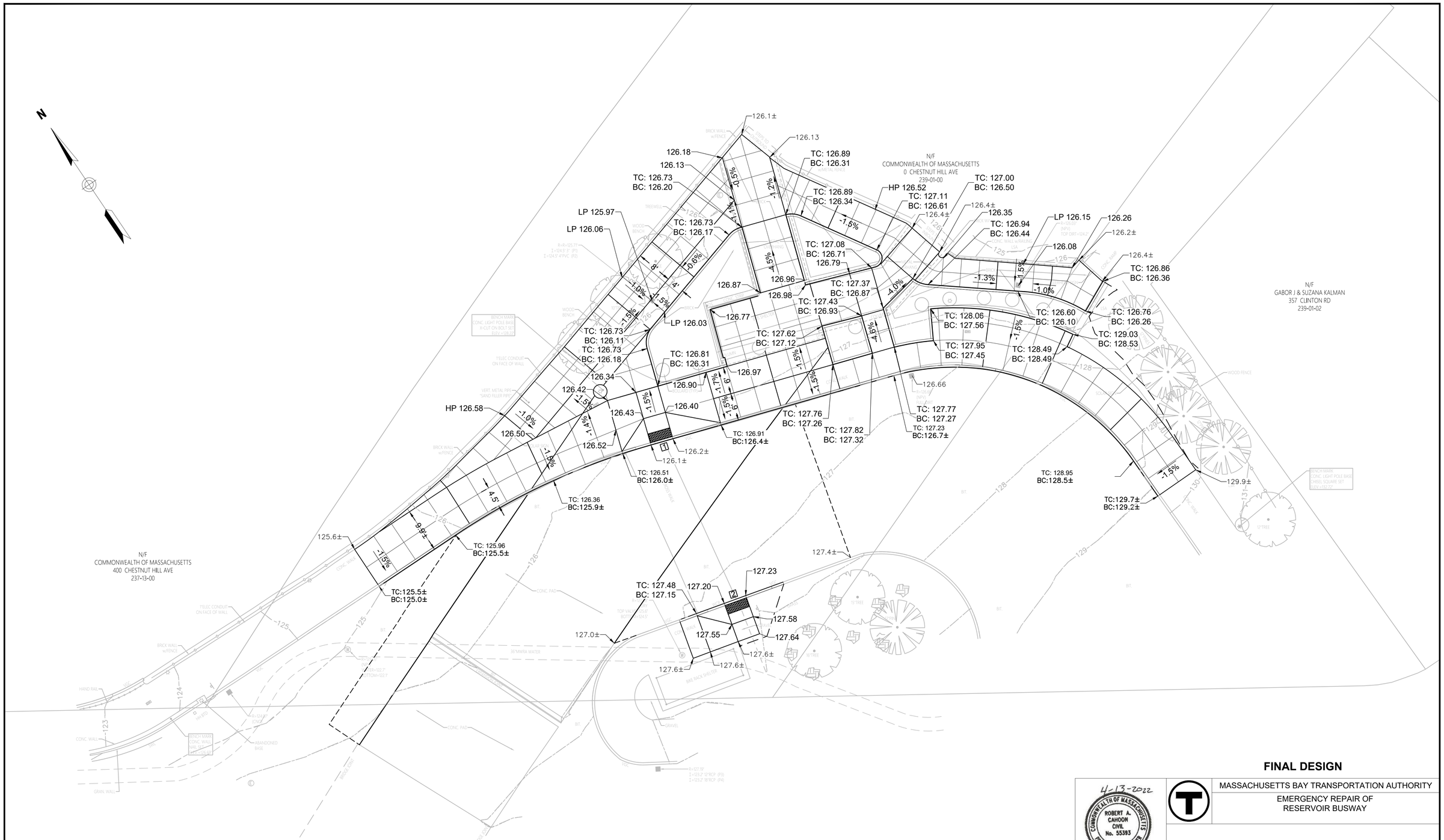
ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

vhb
101 WALNUT STREET
PO BOX 9151
WATERTOWN, MA 02472
617-924-1770

0 10 20 30 40
SCALE: 1" = 10'

HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: AS NOTED	RAC	AA	SHK		
DATE: APRIL 13, 2022				SHEET 16 OF 22	.

15063-01 RESERVOIR (LAYOUT).DWG Plotted on Apr-22 4:10 PM



LEGEND

XXX.XX - PROPOSED GRADE
XXX.X - EXISTING GRADE
- PEDESTRIAN CURB RAMP NO. (SEE SHEET 18)

FINAL DESIGN

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. CAHOON
CIVIL
No. 55393
PROFESSIONAL ENGINEER

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF
RESERVOIR BUSWAY

GRADING PLAN

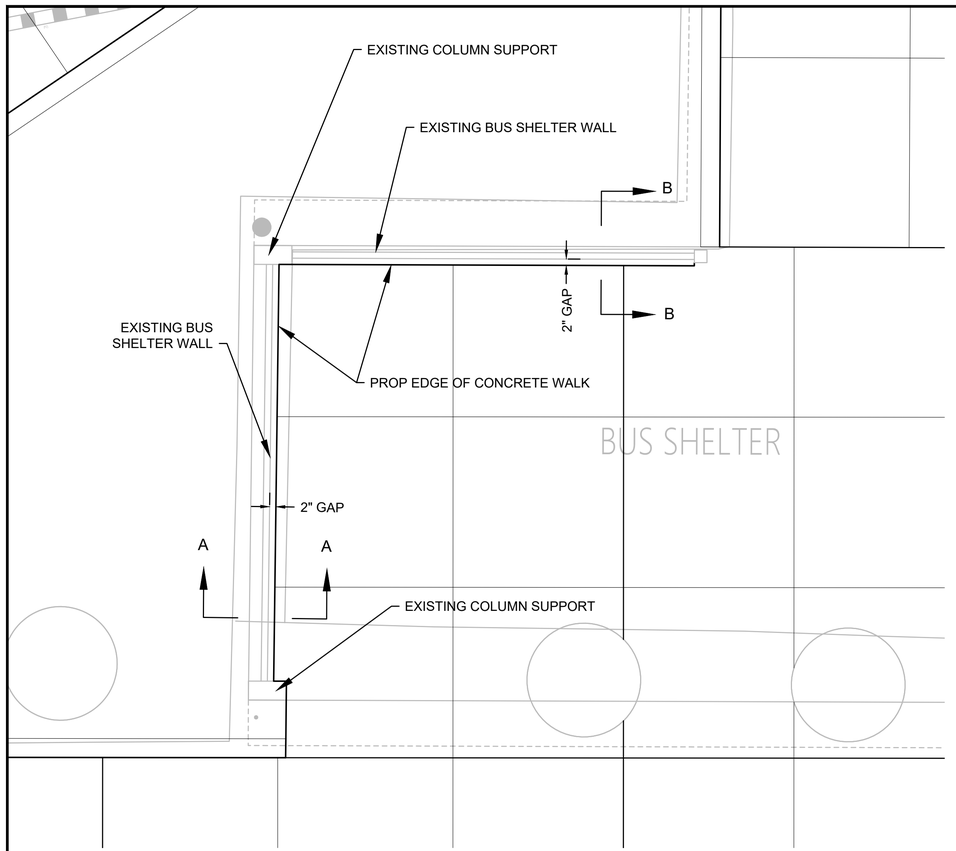
ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

0 10 20 30 40
SCALE: 1" = 10'

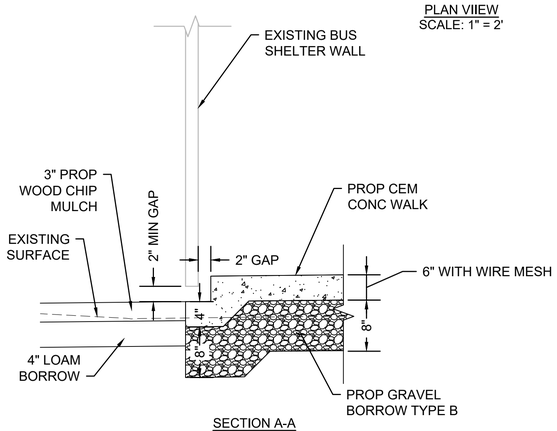
vhb
101 WALNUT STREET
PO BOX 9151
WATERTOWN, MA 02472
617-924-1770

HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: AS NOTED	RAC	AA	SHK		
DATE: APRIL 13, 2022				SHEET 17 OF 22	

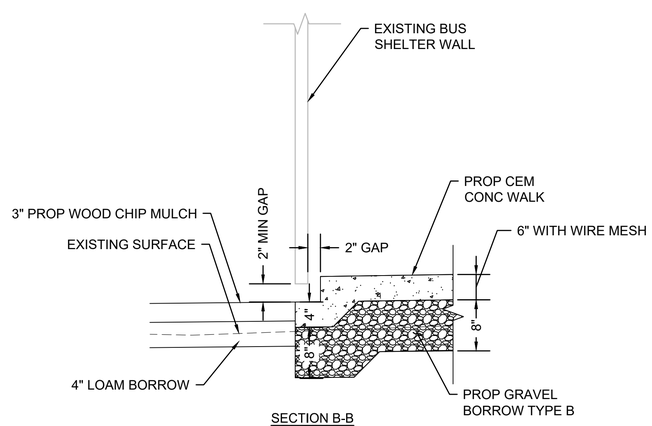
15063-01 RESERVOIR (GRADING).DWG Plotted on Apr-22 4:11 PM



PLAN VIIEW
SCALE: 1" = 2'



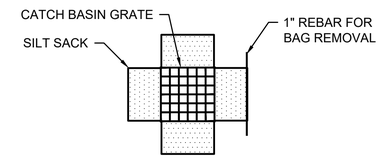
SECTION A-A
SCALE: 1" = 1'



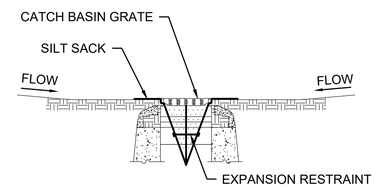
SECTION B-B
SCALE: 1" = 1'

WALK AT BUS SHELTER WALL DETAIL

SCALE: AS NOTED



PLAN VIEW



SECTION VIEW

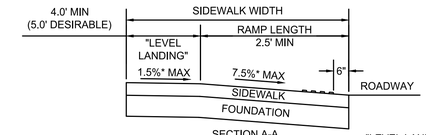
NOTES:
1. INSTALL SILT SACK IN EXISTING CATCH BASINS, BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. GRATE TO BE PLACED OVER SILT SACK.
3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED

INLET PROTECTION - SILT SACK IN CATCH BASIN

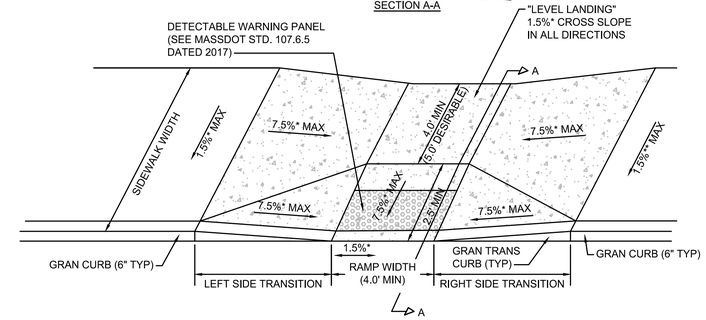
SCALE: N.T.S.

WHEELCHAIR RAMP DATA									
NO.	SIDEWALK WIDTH	RAMP WIDTH	RAMP LENGTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEV
					REVEAL	TRANS	REVEAL	TRANS	
1	12.0'	5.0'	6.0'	2.5%	6"	6.5'	6"	11.0'	126.08
2	12.0'	4.0'	5.0'	1.45%	6"±	6.5'±	6"	6.5'	127.17

NOTES:
*TOLERANCE FOR CONSTRUCTION ±0.5%



SECTION A-A



OBLIQUE VIEW

PEDESTRIAN CURB RAMP - 6.50' TO 12.50' WIDTH

SCALE: N.T.S.

15063-01 RESERVOIR (DETAILS).DWG Plotted on Apr-22 4:11 PM

FINAL DESIGN

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. CAHOON
CIVIL
No. 55393
PROFESSIONAL ENGINEER

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

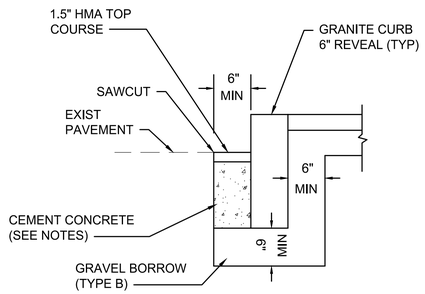
EMERGENCY REPAIR OF
RESERVOIR BUSWAY

CONSTRUCTION DETAILS

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

vhb
101 WALNUT STREET
PO BOX 9151
WATERTOWN, MA 02472
617-924-1770

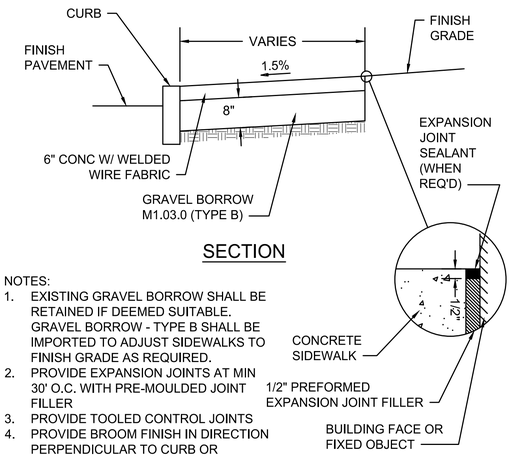
HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: AS NOTED	RAC	AA	SHK		
DATE: APRIL 13, 2022				SHEET 18 OF 22	.



NOTES:
1. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB.
2. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.

GRANITE CURB IN EXISTING PAVEMENT

SCALE: N.T.S.

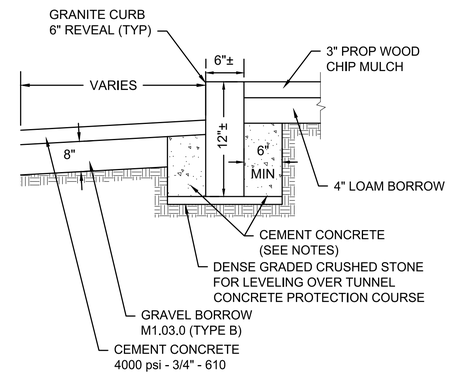


SECTION

NOTES:
1. EXISTING GRAVEL BORROW SHALL BE RETAINED IF DEEMED SUITABLE. GRAVEL BORROW - TYPE B SHALL BE IMPORTED TO ADJUST SIDEWALKS TO FINISH GRADE AS REQUIRED.
2. PROVIDE EXPANSION JOINTS AT MIN 30' O.C. WITH PRE-MOULDED JOINT FILLER
3. PROVIDE TOOLED CONTROL JOINTS
4. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB OR PRIMARY DIRECTION OF TRAVEL

CEMENT CONCRETE SIDEWALK

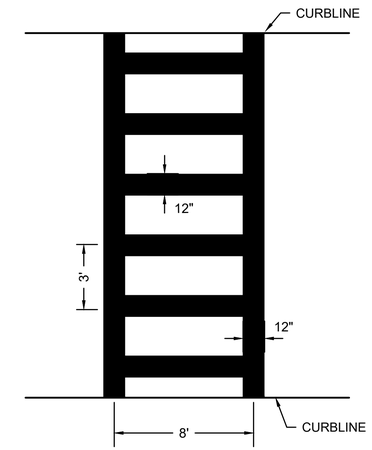
SCALE: N.T.S. DWG: WALK-01 DATE: MARCH 2013



NOTES:
1. GRANITE CURBING AT LANDSCAPE AREAS SHALL BE 6"± WIDE X 12" TALL WITH SPLIT FACE AND BACK AND SAWN TOP, BOTTOM, AND ENDS. STRAIGHT CURBING SHALL COME IN RANDOM LENGTHS BETWEEN 4' TO 10'. CURVED CURBING SHALL BE CUT FOR RADII FROM 1' TO 125' AND SHALL COME IN RANDOM LENGTHS OF 3' TO 7'.
2. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB
3. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.
4. GRANITE CURBING AT LANDSCAPE AREAS SHALL BE SET ON 6" GRAVEL BORROW (TYPE B) WHERE TUNNEL CONCRETE PROTECTION COURSE IS NOT ENCOUNTERED.

GRANITE CURB AT LANDSCAPE AREAS

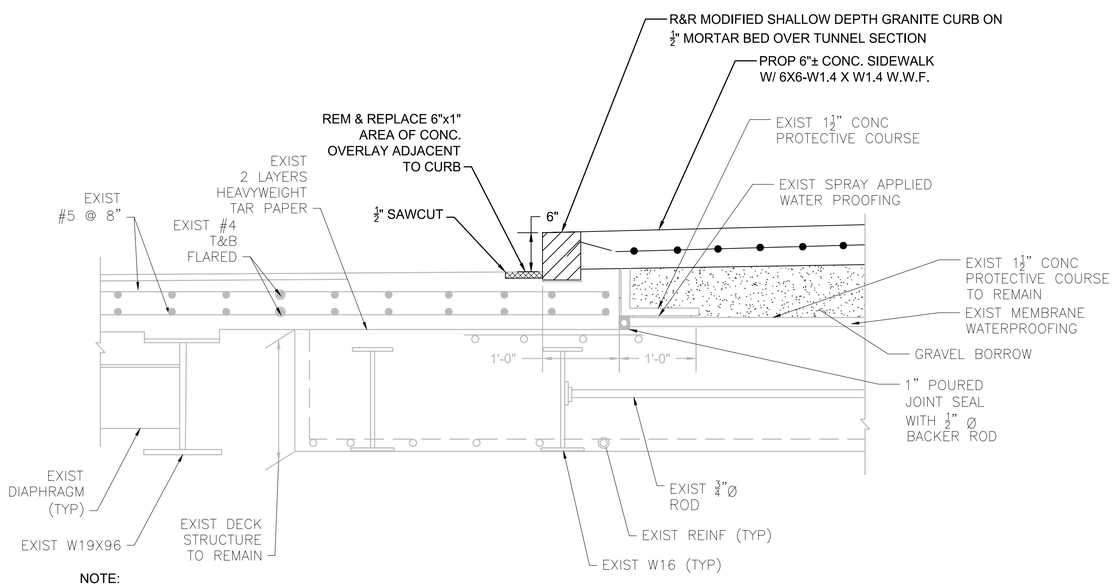
SCALE: N.T.S.



NOTES:
1. ALL EXISTING PAVEMENT MARKINGS SHALL BE FULLY ERADICATED BY APPROVED METHOD PRIOR TO THE APPLICATION OF PROPOSED MARKINGS.
2. ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED.
3. ALL CROSSWALKS INSTALLED SHALL CONFORM TO THE RELEVANT PROVISIONS OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGES" DATED 2022.

HIGH VISIBILITY CROSSWALK

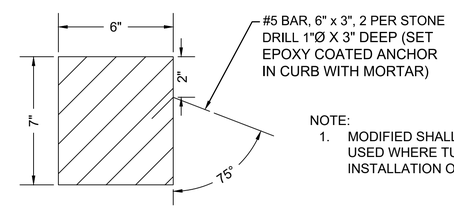
SCALE: N.T.S.



NOTE:
1. EXISTING DETAIL PROVIDED BASED ON AS-BUILT DRAWINGS FOR CHESTNUT HILL AVENUE DECK PLAN AND DETAILS, CONTRACT NO. B27CN03 DATED APRIL 10, 2003.
2. CONCRETE OVERLAY SHALL BE SELECTED FROM MASSDOT QCML "RAPID SET CONCRETE PATCH MATERIALS (HORIZONTAL)". CONCRETE OVERLAY SHALL BE SEAL WITH A SEALER SELECTED FROM MASSDOT QCML "CONCRETE SEALER (M9.15.0)"

TYPICAL SIDEWALK DETAIL OVER EXISTING TUNNEL

SCALE: N.T.S.



NOTE:
1. MODIFIED SHALLOW DEPTH GRANITE CURB TO BE USED WHERE TUNNEL STRUCTURE PROHIBITS INSTALLATION OF FULL DEPTH CURB

MODIFIED SHALLOW DEPTH GRANITE CURB

SCALE: N.T.S.

FINAL DESIGN

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. CAHOON
CIVIL
No. 55393
PROFESSIONAL ENGINEER

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF RESERVOIR BUSWAY

CONSTRUCTION DETAILS

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

vhb
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617-924-1770

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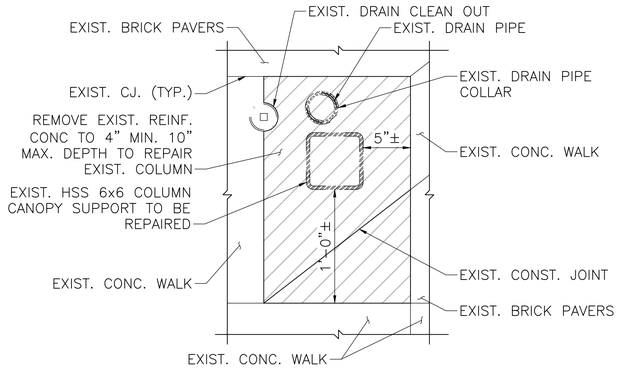
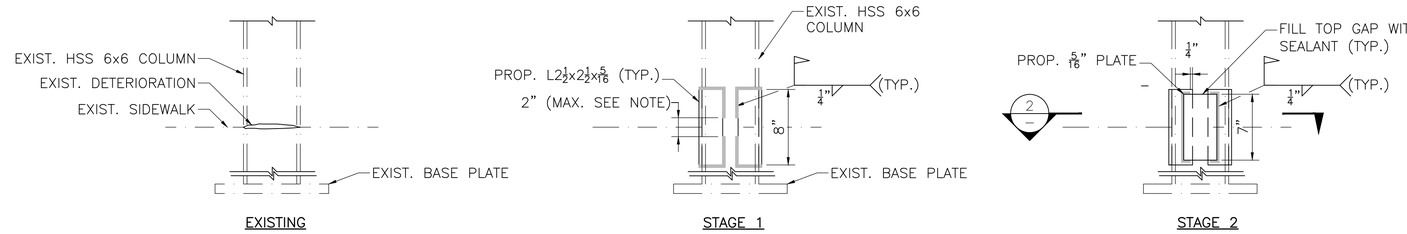
DATE: APRIL 13, 2022				SHEET 19 OF 22	

15063-01 RESERVOIR (DETAILS).DWG Plotted on Apr-22 4:11 PM



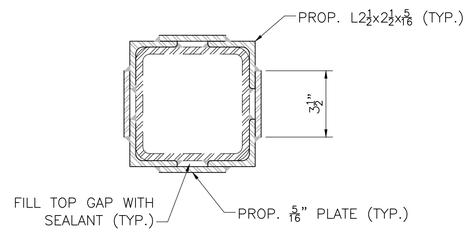
COLUMN REPAIR - PLAN

SCALE: $1\frac{1}{2}$" = 1'-0"



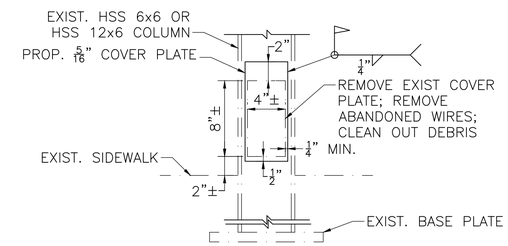
COLUMN REPAIR STAGES - ELEVATION

SCALE: $1\frac{1}{2}$" = 1'-0"



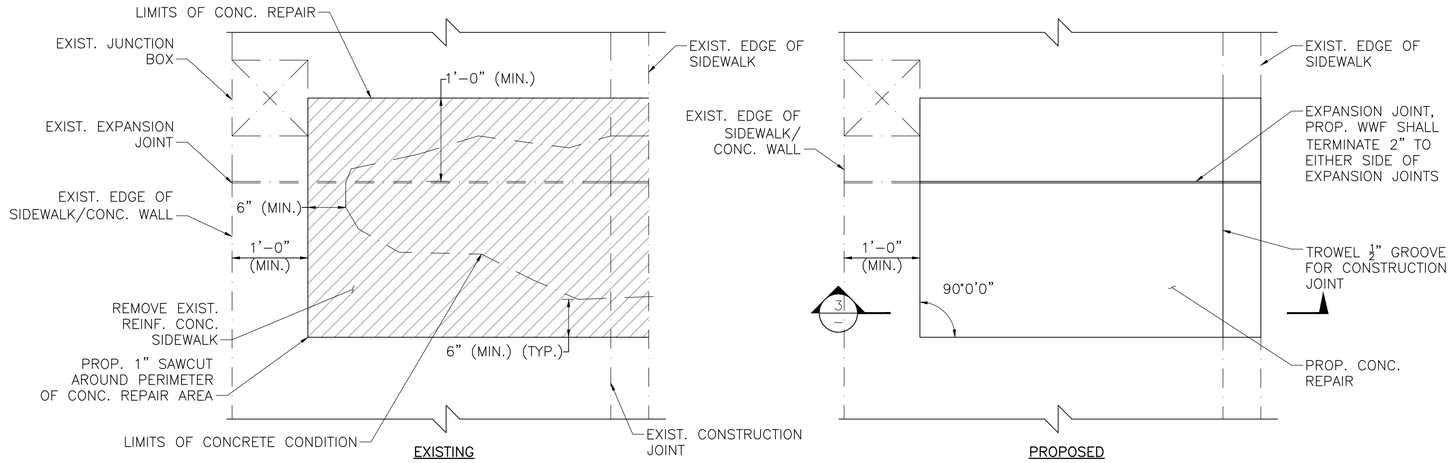
COLUMN DETAIL 2

SCALE: 3" = 1'-0"



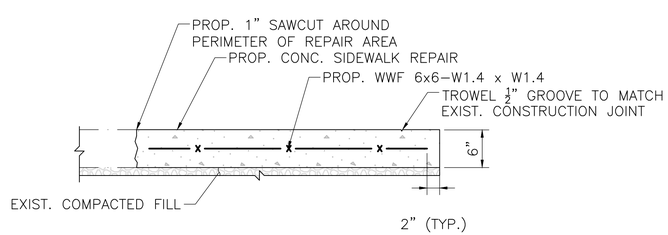
COLUMN HAND HOLE COVER

SCALE: $1\frac{1}{2}$" = 1'-0"



TYPICAL CONCRETE RAMP REPAIR - PLAN

SCALE: 1" = 1'-0"



TYPICAL SIDEWALK REPAIR 3

SCALE: 1" = 1'-0"

CONCRETE REPAIR NOTES:

1. CONCRETE REPAIR LIMITS SHALL BE AS SHOWN IN THE DETAILS AND AS FOLLOWS:
   - 1.1. CONCRETE REPAIR LIMITS WITHIN 6" OF A JUNCTION BOX SHALL EXTEND TO THE JUNCTION BOX.
   - 1.2. CONCRETE REPAIR LIMITS WITHIN 1'-0" OF AN EXPANSION JOINT SHALL EXTEND TO 1'-0" BEYOND THE EXPANSION JOINT.
   - 1.3. CONCRETE REPAIR LIMITS SHALL BE A MINIMUM OF 6" BEYOND THE DETERIORATED/PATCHED CONCRETE.
2. ALL REPAIRED CONCRETE SHALL BE SQUARE WITH LIMITS OF THE REPAIR SQUARE TO THE RAMP OR ADJACENT FEATURES.
3. PROPOSED WWF SHALL BE LOCATED IN THE MIDDLE OF THE REPAIRED CONCRETE 3" FROM THE TOP.
4. THE CONCRETE SHALL BE PLACED TO MATCH EXISTING GRADE OF SURROUNDING CONCRETE.
5. THE EXISTING CONSTRUCTION JOINTS, CONTRACTION JOINTS, AND EXPANSION JOINTS ARE NOT ALL SHOWN. THE CONTRACTOR SHALL MATCH ALL EXISTING CONSTRUCTION JOINTS AND CONTRACTION JOINTS INTO THE REPAIRED CONCRETE BY USING A TROWEL TO PUT A ½" GROOVE INTO THE REPAIRED CONCRETE. THE EXISTING EXPANSIONS JOINT GAPS SHALL REMAIN AND A PREFORMED FILLER SHALL BE USED TO SEPARATE THE SLABS OF CONCRETE.
6. ALL CONCRETE SIDEWALK REPAIRS SHALL BE PERFORMED DURING NON-REVENUE HOURS AND THE CONCRETE REPAIR MATERIAL SHALL BE RAPID SET CONCRETE, SEE SHEET 03.

STEEL REPAIR NOTES:

1. SEE SHEET 13 OF 22 FOR LOCATION OF COLUMN REPAIR AND COVER PLATE REPLACEMENT.
2. ALL EXIST. STEEL WITHIN 6" OF A REPAIR OR COVER PLATE REPLACEMENT SHALL BE CLEANED TO SSPC-SP3, OR TO A PAINT MANUFACTURES WRITTEN RECOMMENDATIONS.
3. ALL STEEL SHALL BE ASTM A36 PAINTED.
4. FLAME CUTTING OF NEW OR EXISTING STEEL IS NOT ALLOWED.
5. WELD FABRICATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION ANSI/AWS D1.1, WHICHEVER IS MORE STRINGENT.
6. THE AVAILABLE RECORD PLANS DO NOT INDICATE WHEN THE CANOPY STRUCTURE WAS BUILT. TESTING FOR LEAD PAINT WAS NOT PERFORMED DURING THE DESIGN. THE CONTRACTOR IS REQUIRED TO PERFORM TESTING TO CONFIRM IF LEAD BASED PAINT IS PRESENT.

FINAL DESIGN

COMMONWEALTH OF MASSACHUSETTS
STEPHEN JAHNES No. 50847
REGISTERED PROFESSIONAL ENGINEER
4/22/2022
Stephen Jahnes

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF RESERVOIR BUSWAY

MBTA GREEN LINE D - BRANCH
CHESTNUT HILL AVENUE BUSWAY

STRUCTURAL REPAIR DETAILS

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

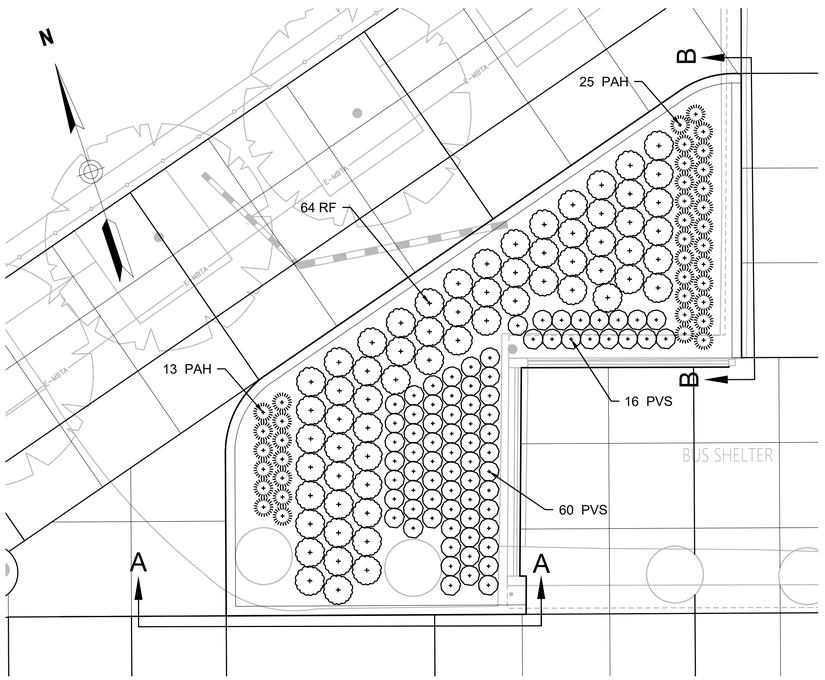
vhb
101 WALNUT STREET
PO BOX 9151
WATERTOWN, MA 02472
617-924-1770

HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: AS NOTED	SJ	SJ	KR		
DATE: APRIL 13, 2022				SHEET 20 OF 22	

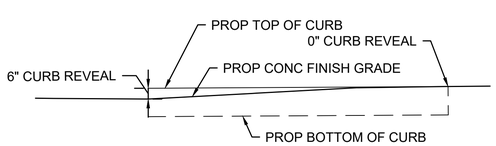
15063-01 RESERVOIR_HD(STRUCTURAL).DWG Plotted on Apr-22 2:21 PM

LANDSCAPE AREA 1 – PLANT SUMMARY

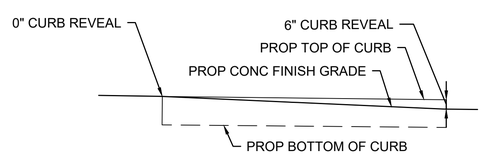
SYMBOL	SCIENTIFIC NAME	COMMON NAME	CONTAINER SIZE	SPACING	COUNT	REMARKS
PAH	Pennisetum alopecuroides 'Hameln'	Dwarf Fountain Grass	Plug	12" O.C.	38	
RF	Rudbeckia fulgida	Perennial Coneflower	Plug	18" O.C.	64	
PVS	Panicum virgatum 'Shenandoah'	Switchgrass	Plug	12" O.C.	76	



PLAN VIIEW



SECTION A-A



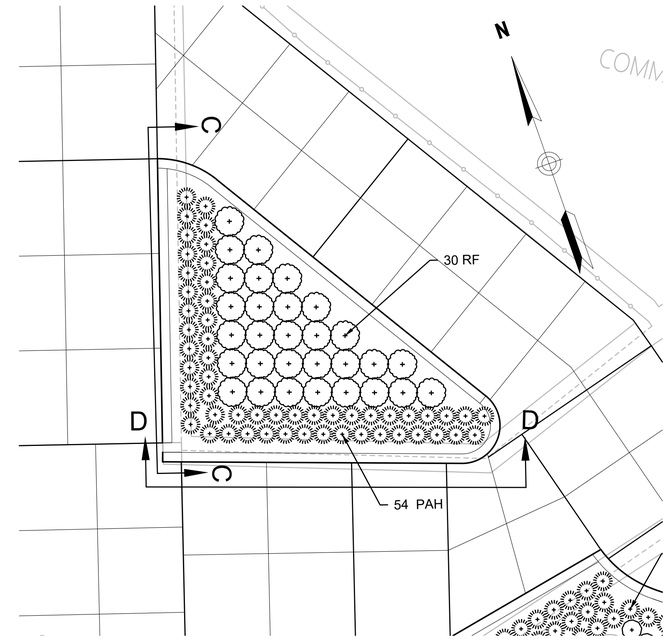
SECTION B-B

LANDSCAPE AREA 1

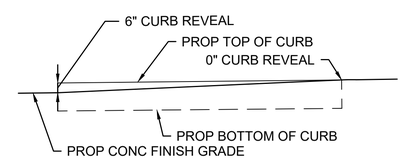
SCALE: 1" = 4'

LANDSCAPE AREA 2 – PLANT SUMMARY

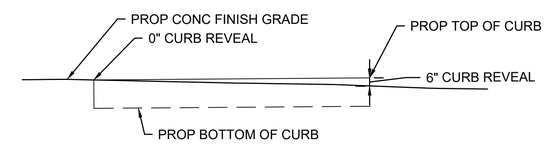
SYMBOL	SCIENTIFIC NAME	COMMON NAME	CONTAINER SIZE	SPACING	COUNT	REMARKS
PAH	Pennisetum alopecuroides 'Hameln'	Dwarf Fountain Grass	Plug	12" O.C.	30	
RF	Rudbeckia fulgida	Perennial Coneflower	Plug	18" O.C.	54	



PLAN VIIEW



SECTION C-C



SECTION D-D

LANDSCAPE AREA 2

SCALE: 1" - 4'

FINAL DESIGN

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. CAHOON
CIVIL
No. 55383
PROFESSIONAL ENGINEER

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF
RESERVOIR BUSWAY

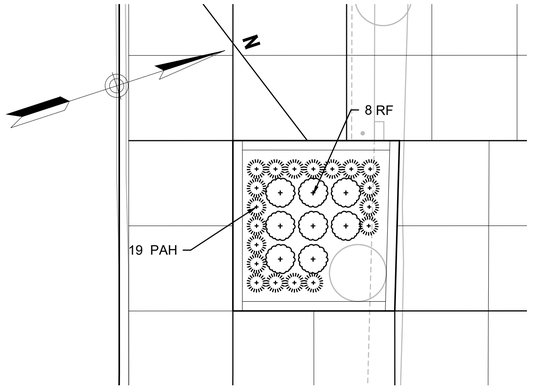
LANDSCAPE DETAILS

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

vhb
101 WALNUT STREET
PO BOX 9151
WATERTOWN, MA 02472
617-924-1770

	DES. BY	DR. BY	CHK. BY		ISSUE
HORIZ: AS NOTED	RAC	AA	SHK	PLAN NO.	.
VERT: AS NOTED					
DATE: APRIL 13, 2022				SHEET 21 OF 22	

15063-01 RESERVOIR (DETAILS).DWG Plotted on Apr-22 4:12 PM



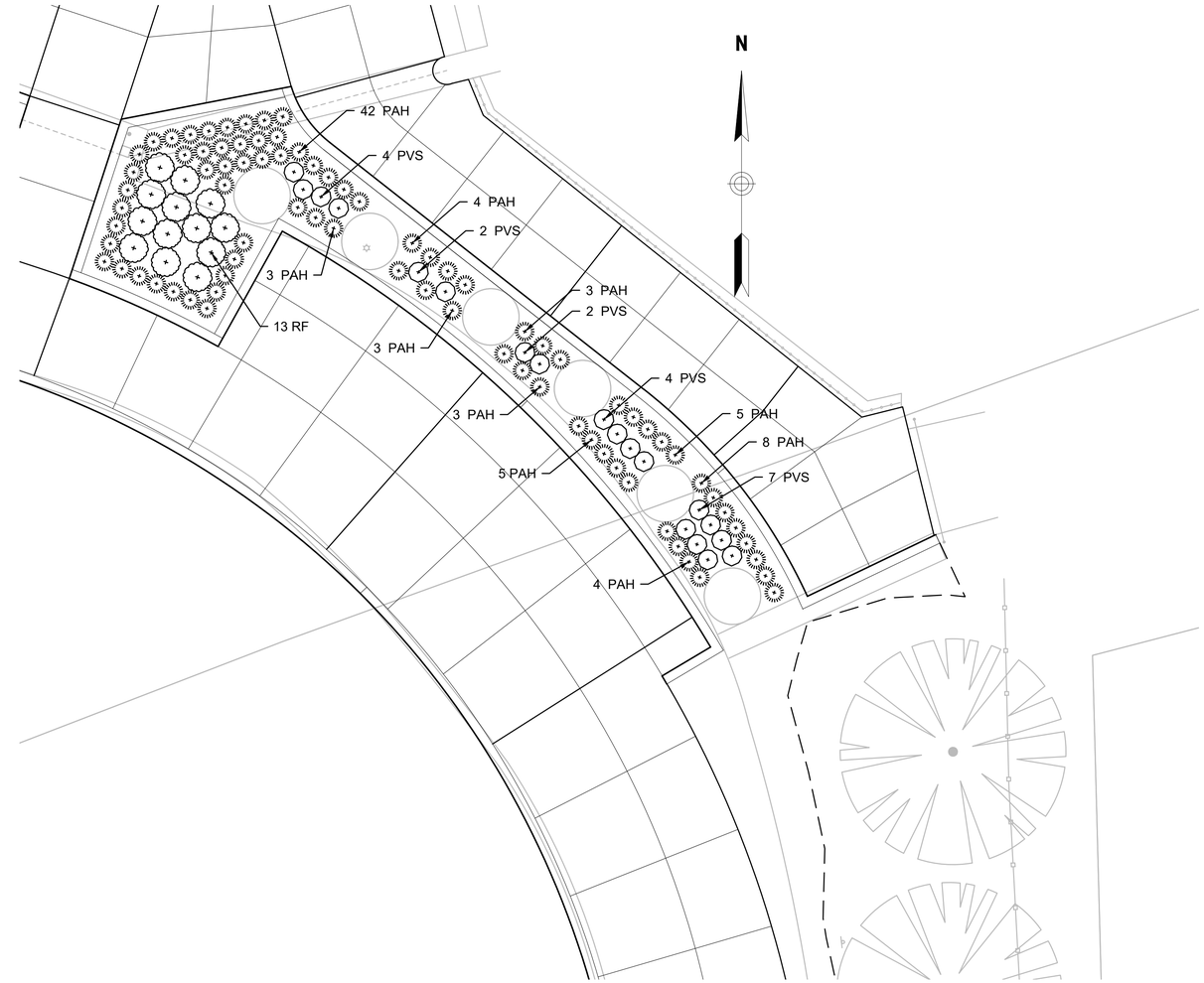
PLAN VIIEW

LANDSCAPE AREA 3

SCALE: 1" = 4'

LANDSCAPE AREA 3 – PLANT SUMMARY

SYMBOL	SCIENTIFIC NAME	COMMON NAME	CONTAINER SIZE	SPACING	COUNT	REMARKS
PAH	Pennisetum alopecuroides 'Hameln'	Dwarf Fountain Grass	Plug	12" O.C.	19	
RF	Rudbeckia fulgida	Perennial Coneflower	Plug	18" O.C.	8	



PLAN VIEW

LANDSCAPE AREA 4

SCALE: 1" - 4'

LANDSCAPE AREA 4 – PLANT SUMMARY

SYMBOL	SCIENTIFIC NAME	COMMON NAME	CONTAINER SIZE	SPACING	COUNT	REMARKS
PAH	Pennisetum alopecuroides 'Hameln'	Dwarf Fountain Grass	Plug	12" O.C.	80	
RF	Rudbeckia fulgida	Perennial Coneflower	Plug	18" O.C.	13	
PVS	Panicum virgatum 'Shenandoah'	Switchgrass	Plug	12" O.C.	19	

4-13-2022
COMMONWEALTH OF MASSACHUSETTS
ROBERT A. CAHOON
CIVIL
No. 55393
PROFESSIONAL ENGINEER

FINAL DESIGN

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

EMERGENCY REPAIR OF
RESERVOIR BUSWAY

LANDSCAPE DETAILS

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.

vhb
101 WALNUT STREET
PO BOX 9151
WATERTOWN, MA 02472
617-924-1770

HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: AS NOTED	RAC	AA	SHK		
DATE: APRIL 13, 2022				SHEET 22 OF 22	

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